EPARTMENT ... TECHNO
LO AND ERIE COUNTY PUBLIC

MARCH 2, 1957
VOL. 152—NO. 9

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

25th ANNIVERSARY

Miss Lou Woodall turns "paper boy" to deliver enlarged special 25th anniversary issue of *Sun Dial*, miniature newspaper and bill enclosure published by Peninsular Telephone Co. of Tampa, Fla. See page 31 for story.

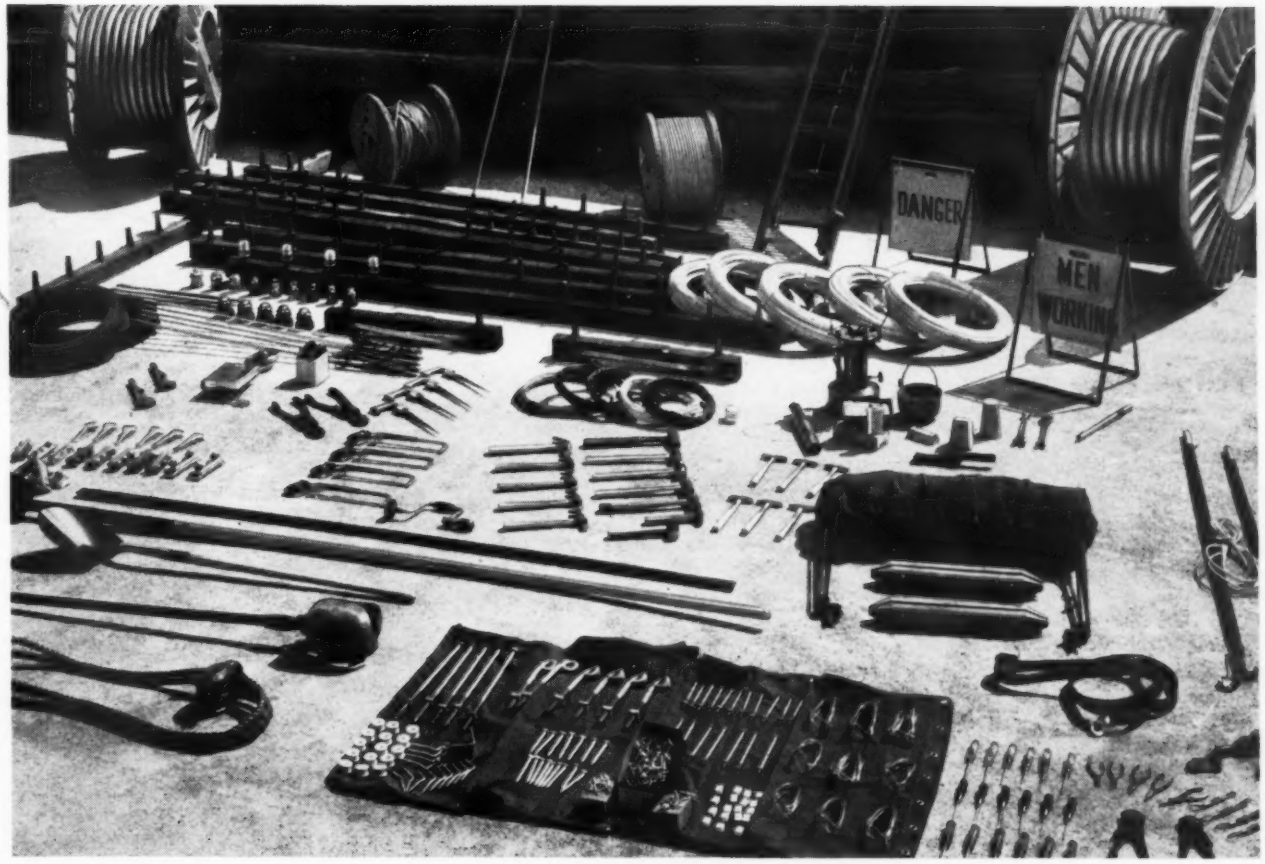
Guaranteed Circulation This Issue
11,642, of Which 11,073 Is Paid

MANAGEMENT • PLANT • TRAFFIC • COMMERCIAL • LEGAL • ACCOUNTING

XUM

EQUIPMENT: typical Stromberg-Carlson XY® central office installation, a good example of our continuous and progressive development program.

When you need supplies, you can count on this catalo and 5 well-stocked regional warehou



SUPPLIES: these are a few of the thousands of supply items we offer.

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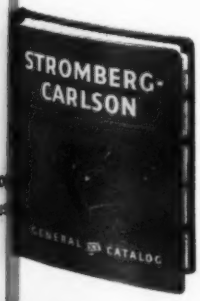
our right hand knows what our left hand is doing

When you order supplies from Stromberg-Carlson, you get the *immediate* satisfaction of a *double guarantee*—the maker's and Stromberg-Carlson's . . . plus this important *long-range* benefit:

A substantial share of every supply dollar you spend with us is invested in the development of new telephone equipment for you.

We feel particularly close to the independent telephone industry because we have been associated with it for well over 60 years—*on one hand* as a maker of equipment . . . *on the other hand* as a source of supplies.

That's why your investment in supplies pays off in two ways when you place your order with us.



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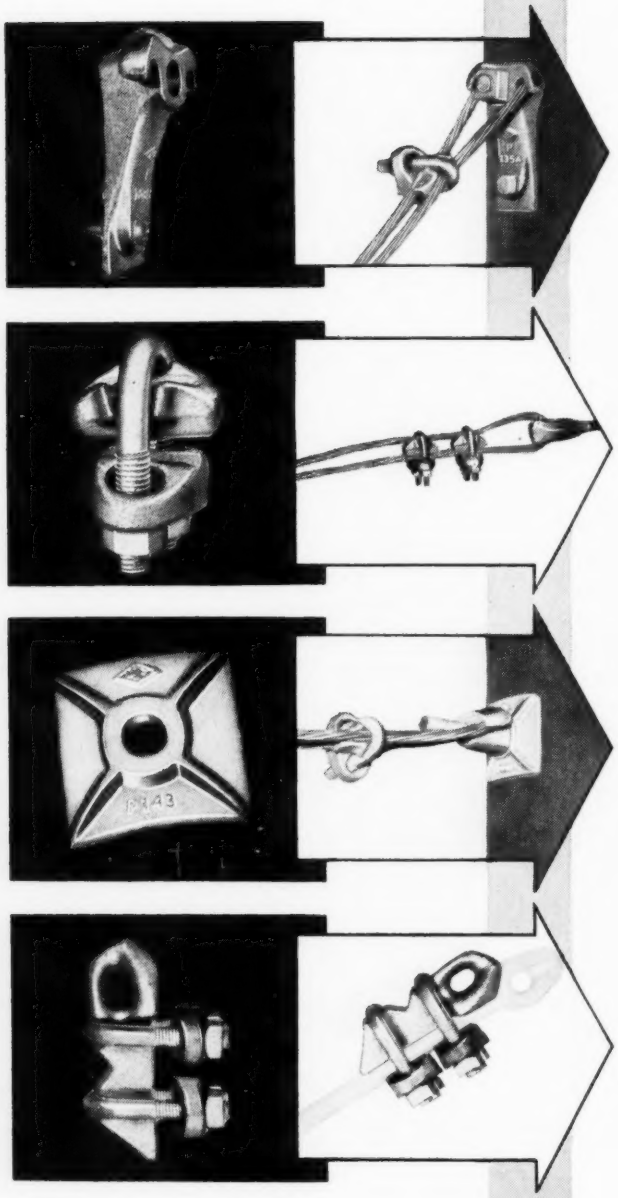

Make your guying EASIER, QUICKER, STRONGER, at less cost with

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MALLEABLE IRON Pole Line Hardware

MIF Guy Hooks are so designed that a large portion of the vertical and horizontal components of the load are transmitted to the pole, placing the bolt in tension and thus relieving it of much of the shear and bending forces. The wide heel pad resists overturning, an integral wedge and spurs resist vertical movement, and the channel shaped back provides the best fit on the pole. Made-up guy loop is easily and quickly slipped over the hook at any time during construction and cannot come off unless rotated back to the engaging (horizontal) position. Solid one-piece construction puts every ounce of metal where it will do the most good.

MIF Guy Clamps feature lower weight and cost per unit of holding power—can be placed on the strand in a matter of seconds without disassembling—no special tools required. Clamping force of the "come-along" type grip increases as the load increases—for greater holding power. The wide range of strand diameters accommodated by each size reduces handling and inventory.

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XUM

Polyethylene-covered cables...
shorter poles...

For savings all down the line

In this rural Indiana area, the saving in poles is substantial. The light weight of telephone cable covered with polyethylene permits smaller poles, longer spans, faster installations. In many cases, this cable can be strung without a messenger. Splicing has been simplified.

The polyethylene covering has been found highly resistant to ice formation during the sleet storms common to northern Indiana. Where underground installations are made, polyethylene has eliminated the problem of electrolytic action in the soil. In the near future, much of this cable will be plowed underground, at a considerable saving.

These and many other facts about the performance of BAKELITE Brand Polyethylene and Vinyl Plastics are being confirmed in a variety of fields. Other applications, such as signal control cable, utility line wire and service drop, power cable and coaxial cable, are proving their remarkable dependability under a range of operating requirements. These materials meet REA requirements for plastic-covered telephone wire. Also, IMSA specifications for fire alarm and signal control cable; ASA standards for weatherproof wire; and ASTM D1238-52T Type II, dielectric materials.

Developments in the use of BAKELITE Brand Polyethylene and Vinyl Plastics for wire covering are reported extensively in Bakelite Company technical publications, available without cost. To keep up-to-date, write Dept. QA-180.

BAKELITE BRAND PLASTICS

BAKELITE COMPANY, *A Division of Union Carbide and Carbon Corporation* UCC 30 East 42nd Street, New York 17, N. Y.

The term BAKELITE and the Trefoil Symbol are registered trade-marks of UCC

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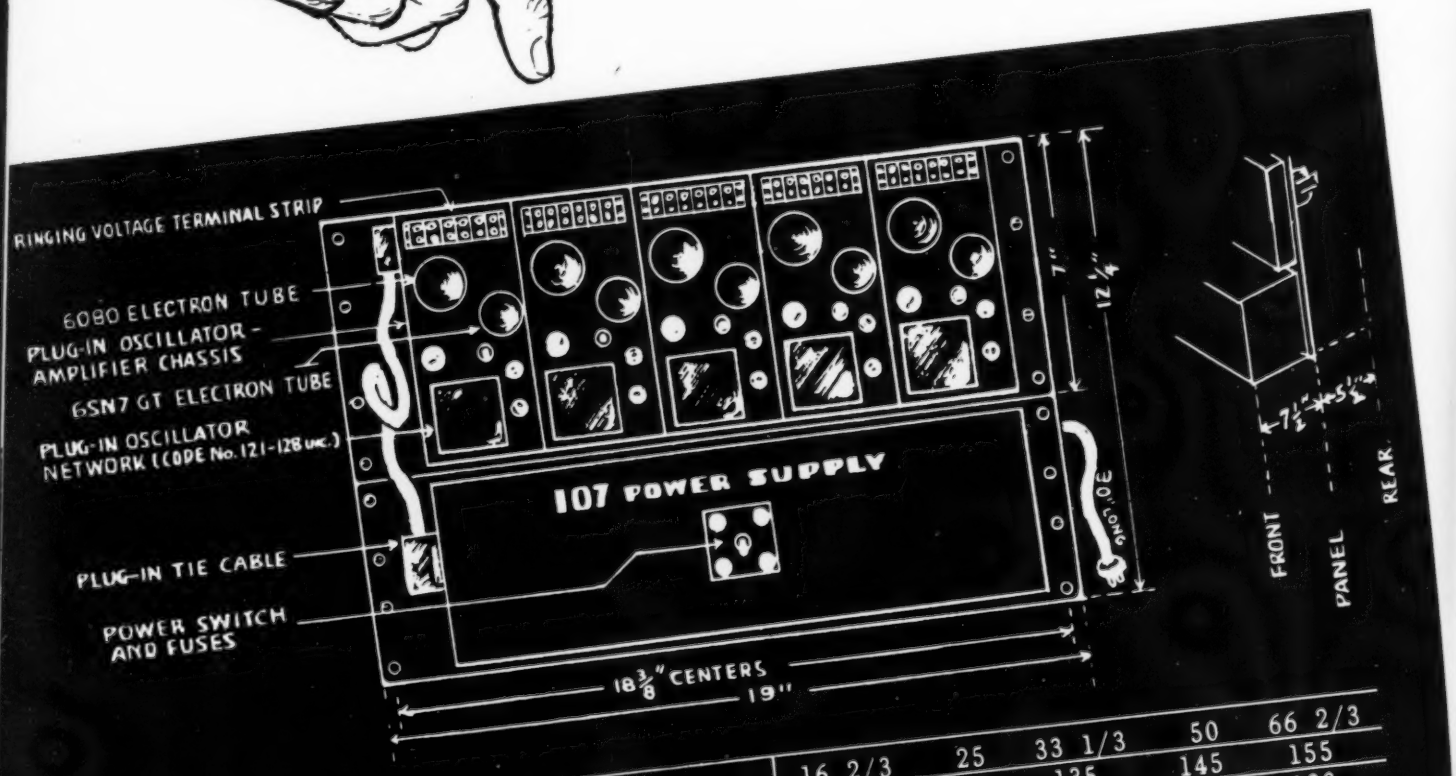

Code No. 101 Harmonic	Frequency	16 2/3	25	33 1/3	50	66 2/3
	*Nom. Ring. Volt.	105	125	135	145	155
	Osc. Net. No.	121	123	124	126	128
Code No. 102 Synchromonic	Frequency	16	30	42	54	66
	*Nom. Ring. Volt.	105	125	135	145	155
	Osc. Net. No.	121	124	125	126	128
Code No. 103 Decimonic	Frequency	20	30	40	50	60
	*Nom. Ring. Volt.	105	125	135	145	155
	Osc. Net No.	122	124	125	126	127
Code No. 104 Special	Frequency	20	30	42	54	66
	*Nom. Ring. Volt.	105	125	135	145	155
	Osc. Net. No.	122	124	125	126	128

*Voltages adjustable from values indicated.

Any combination of five ringing frequencies available on special order.

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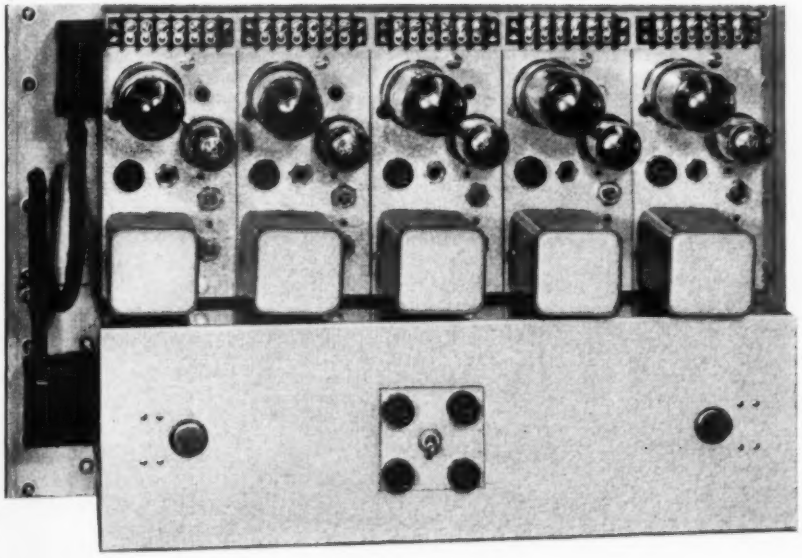
look at the advantages of the

KELLOGG ELECTRONIC RINGING GENERATOR



Write for your copy of the bulletin on the Kellogg Electronic Ringing Generator, today!

More and more independent telephone companies are adopting the Kellogg Electronic Ringing Generator as standard equipment. Here are a few of the many reasons:

- **LESS MAINTENANCE** . . . No moving parts . . . no contacts to clean or replace. Plug-in components . . . not damaged by shorted lines...experience proves tube life normally exceeds 18 months.
- **NO CROSS-RING PROBLEMS**...Extreme frequency stability . . . precise, easily adjustable frequencies.
- **FLEXIBILITY**...Provides any combination of 5 or fewer ringing frequencies. All ringing frequencies are independent of each other and/or frequency of power source.
- **EFFICIENT** . . . All frequencies continuously available . . . furnishes enough power for 1000 or more lines.
- **COMPACT**...Mounts on standard 19" relay rack...requires only 12¼" of vertical space.

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FLASHES AND PLUGS

LINES LESS BUSY. Illinois Bell Telephone News in a recent issue observed:

"Telephone users in Central Iowa are no doubt greeting the winter with cheers. The advent of freezing temperatures and icy streams insures better telephone service for them.

"With the river frozen over, there will be an end to fishermen casting their lines in search of the wily trout. And far too many inaccurate fishermen, the subscribers had complained to the State Conservation Commission, have been casting their lines over the telephone wire, shorting them out and interrupting telephone service."

•

SAY THE WORD. We hear that over in Michigan telephone subscribers often evince an unusual interest in what's going on in their telephone company. At least one could conclude that from a story that came out following the recent cutover in Saginaw. The new dial prefix PLeasant was assigned to Saginaw numbers.

An operator in Flint received a call from Saginaw, minus the prefix. She stated, "Saginaw numbers now have a Pleasant prefix, sir."

"Really, operator?" replied the customer in a tone of deep interest. "What is it?"

•

DOUBLE DUTY. A young housewife of Walkerton, Ind., has had to get a new jewel box, since her old magneto telephone was taken down from the wall to join the march of progress. Proud possessor of heirloom wedding and engagement rings worn by her mother and grandmother before her, the young woman put them on only for church or other special occasions. In the meanwhile, they hung on the handle of the old wall-type telephone.

When United Telephone Co. of Indiana converted the remainder of its Walkerton exchange to common battery recently, the new handset had been in its place for several days before a horrid thought dawned upon this subscriber, along about church time. A hurried call about her rings revealed that the old telephone, along with hundreds of others just like it, had been taken away to be destroyed. The only clue led to a warehouse in Plymouth, Ind.

Miraculously enough, although it took telephone employes until the following Wednesday to locate it, the old telephone was still there. And on the handle, sure enough, hung the jewelry, all intact.

•

SCANDINAVIAN SCANDAL. From the capital of Denmark comes the story about a housewife who lodged a complaint with the Copenhagen Telephone Co. Her husband, she said, took the family telephone with him to work every day.

His purpose: to prevent her running up large telephone bills.

CHANGE OF ADDRESS

Please notify your local postmaster and Circulation Dept. of TELEPHONY of change of address. Change cannot be made without the old as well as the new address. Allow three weeks for change of address to become effective.

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
Since 1901

March 2, 1957

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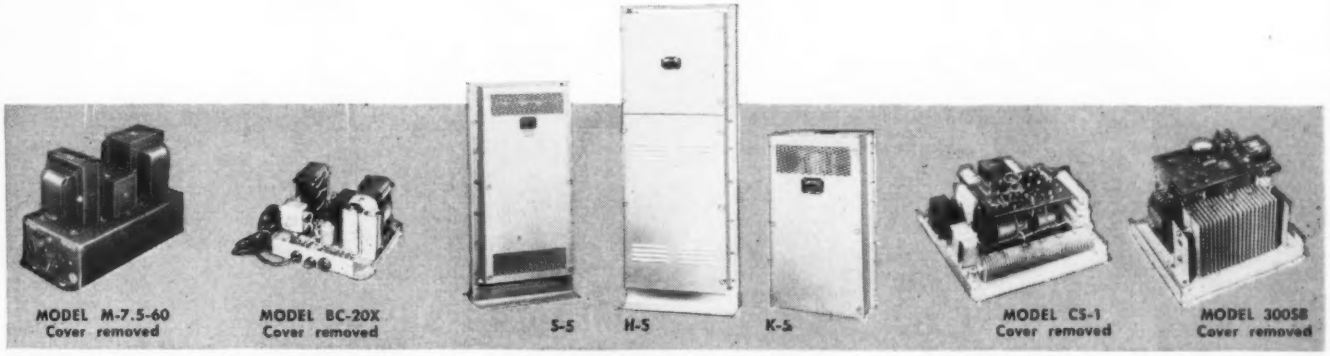
Tough Jobs For LORAIN Ringing and Charging Equipment

We're looking for jobs that you think are too tough for our ringing and charging equipment. Of course you are seeking equipment offering incomparable performance, long wear under super-rugged service applications; try putting our equipment to the test and see how it performs more than our conservative ratings would indicate. Our complete line of frequency changing, tone generating, battery charging and power supplying devices reflects the wealth of design know-how acquired through many years of telephone power experience. All our equipment has the traditional features: no moving parts whatsoever, generously materialed with high quality components. These and other characteristics of Lorain equipment assure you reliable, economical lifetime operation.

The invention and development of SUB-CYCLE magnetic ringing machines is outstanding and is a direct answer to either single frequency ringing requirements or Decimonic, Harmonic and Synchromonic systems needs. For a number of years, FLOTROL battery chargers have been accepted as standard in the industry.

Below is some of the equipment of our manufacture.. We can't show it all — there are approximately three hundred allied items. Look it over, then write us about your requirements. Plan your installations for lowest cost — one of our engineers will help you. Then make sure planned savings keep on paying off . . . specify Lorain for any replacement or expansion need.



Relay Start Sub-Cycles

The original SUB-CYCLE ringing machine. Models for 100 to 4000 stations, with built-in audible ringing tone. Also available with pulsating output for selective ringing with biased bells.

Biased Core Converters

For heaviest loads, or for light ringing loads as in PBX service. Self-starting, excellent voltage regulation. Unaffected by power factor of load or by d-c superimposed ringing current.

Our Multi-Frequency Ringing Trio

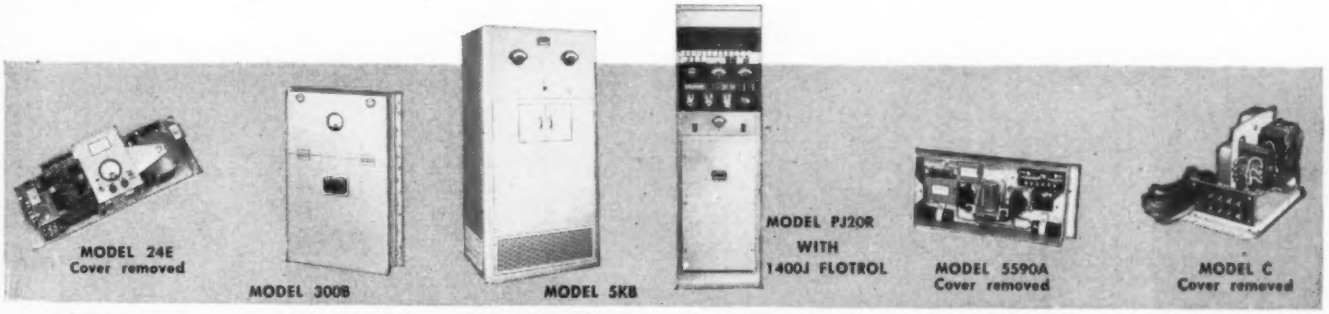
Complete line: the S-5 for Synchromonic, H-5 for Harmonic, and K-5 for Decimonic ringing, utilizing SUB-CYCLE circuits and principles of proven dependability. Adequate reserve capacity for exceptional load conditions. Positively locked ratio between the ringing and input frequencies. Regulated ringing voltage is unaffected by changes in input voltage. Also available with built-in d-c operated remote control relays.

Carrier Supply Units

Provide 130 volt plate current for carrier or repeater operation. Normally operate from 115 volt 60 cycle single phase power supply, transfer to built-in standby vibrator upon power interruptions.

Supplementary Chargers

Unregulated chargers designed to supply a relatively constant current, adjustable by a set of tap switches, to supplement the output of a standard regulated FLOTROL of equal or greater rating.



End Cell Chargers

Constant voltage FLOTROLS to maintain regulated voltage on end cells, assuring long life and full reserve capacity when needed. 2, 3 and 4 cell models available in ratings from 3 amperes to 20 amperes.

Single Phase Flotrols

Capacities up to 24 amp. Most models available as Battery Eliminators. Special model FLOTROLS with particularly low sound level for PBX installations if equipment is in a business office.

Three Phase Flotrols

For plants requiring 25 amperes or more charging capacity. Current limiting feature protects charger against overloads. Exceptionally low power consumption especially during light load periods.

Lorain Power Panels

Regulated supplies with 2.5 to 50 ampere capacity for constant and fluctuating loads. With distribution, supervision and control features. Maintain regulated voltage normally and during power failures.

Power Supply Units

For calculagraph and switchboard clock motors. Furnish low voltage 60 cycles from commercial power or from d-c source by vibrator. Complete with relay to transfer from a-c to standby vibrator.

Dial Tone Generators

Static type, models for providing high and low tones and models for low tone only. Small inexpensive compact generators which can also be run from a 60 cycle standby vibrator supply.

For complete information on any of this equipment or any other equipment of our manufacture, clip and mail coupon.

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XUM

Build your revenue with our ... THE E

Here is the standard model which gives your customers the simplest, most effective 24 hour answering service available. *It answers the telephone, takes and holds calls when other lines are busy, records name, number and message, and tells the caller to call another number*—a complete secretarial service, a wonderful source of revenue for the telephone company.

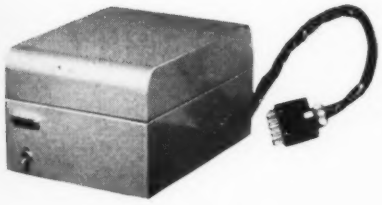
And with the new services now available in the complete Electronic Secretary line, you can offer your customers *a service tailored exactly to fit their own particular requirements.*

The standard Electronic Secretary, Model DCR-1, can also be ordered with: Headphone connection for private playback; automatic erasing and rewind; and automatic stop switch for recording spools to stop wire from running off spools.

LEICH

...omplete line of telephone answering and recording devices

...TH ELECTRONIC SECRETARY LINE



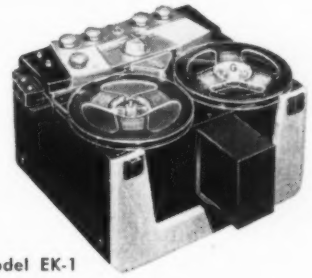
Remote Call-Back

An accessory to the standard Model DCR-1. When this unit is tied into the Electronic Secretary, it is possible to call the number being answered by the Electronic Secretary and get a playback of all the incoming messages. No need for return to home or office.

Model T-R

Automatic Answering

A self-contained Electronic unit designed for automatic answering and delivering a predetermined recorded message. It incorporates a 45 r.p.m. record which carries any desired message. Message can be changed by cutting a new record. Ideal for service businesses, doctors, lawyers, churches, etc.



Model EK-1

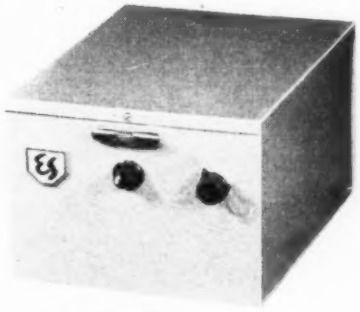
Monitoring

For special adaptation for the exclusive use of operating telephone companies this model features a tape recorder for monitoring messages. Completely automatic mechanism facilities both forward and rewind operations. Model EK-1 is best suited for complaint and service departments, and telephone operator voice training.

Model T-T

Variable Message Answering

This unit performs the same function as Model T-R above, except the message can be changed as frequently as desired. Old message is automatically erased as new message is recorded. Especially designed for brokers, theaters, etc., where messages must be changed frequently.



Model SW

Answering Two Lines

This device is an accessory to the standard Electronic Secretary, Model DCR-1. It is designed to offer the convenience of answering two separate telephone lines.

Tape Adapter

The record player on the ELECTRONIC SECRETARY Model DCR-1 may be changed to a tape adapter. With complete flexibility, it can then record any desired answering message. The tape adapter fits perfectly into the same space as present record player. Full instructions for this replacement accompany the unit to insure satisfaction of performance and service.

MANUFACTURERS OF TELEPHONES, SWITCHBOARDS AND RELATED APPARATUS SINCE 1907
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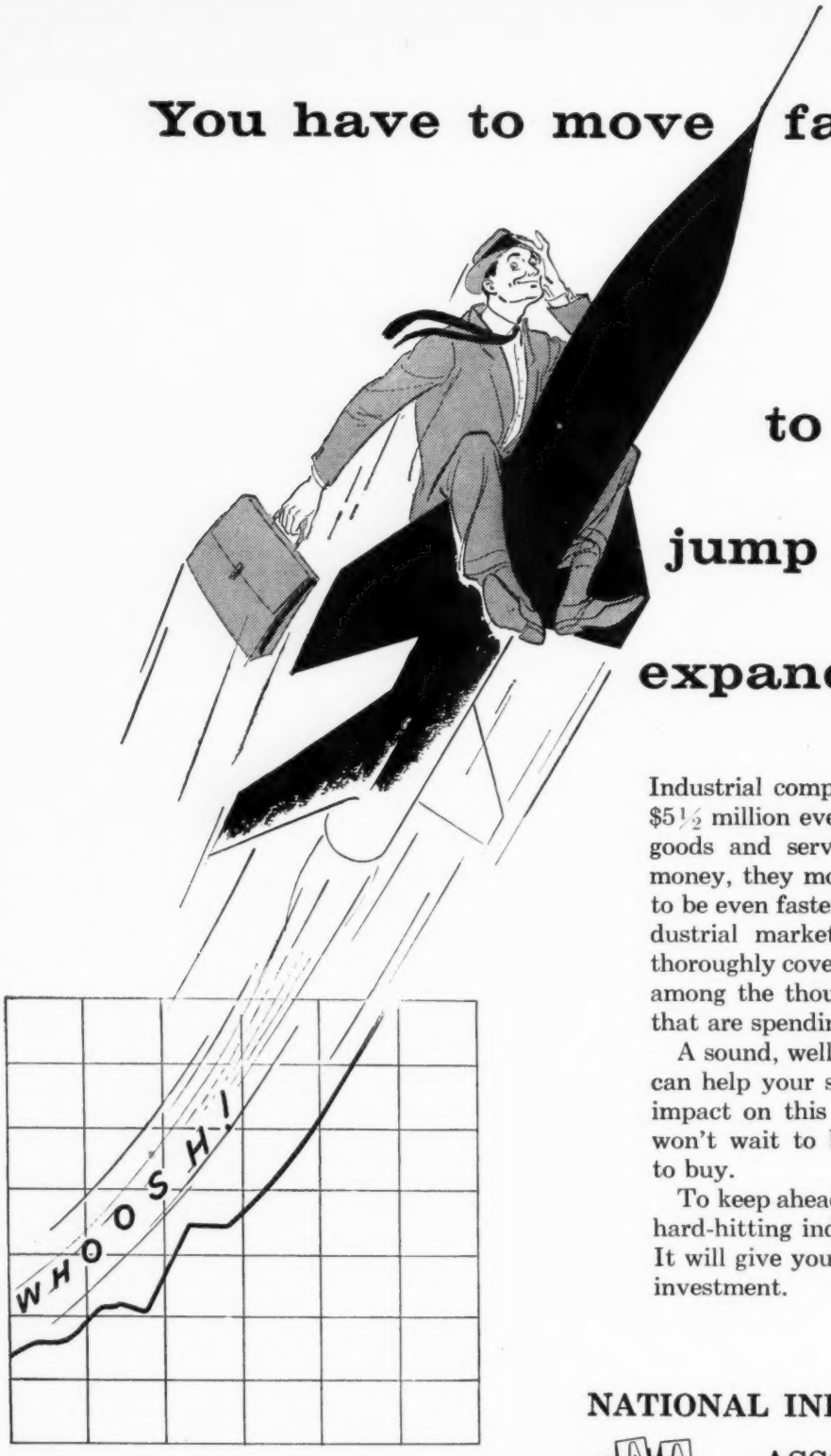

to get the jump on today's expanding market

Industrial companies are spending more than $5½ million every twenty minutes for needed goods and services. In spending that much money, they move mighty fast. But *you* have to be even faster to sell to today's dynamic industrial market. Especially if you want to thoroughly cover your customers and prospects among the thousands of industrial companies that are spending this vast sum.

A sound, well-balanced advertising program can help your sales force make an immediate impact on this big market—the market that won't wait to be sold, because it can't wait to buy.

To keep ahead of this expanding market, put hard-hitting industrial advertising on the job. It will give you a greater return on your sales investment.

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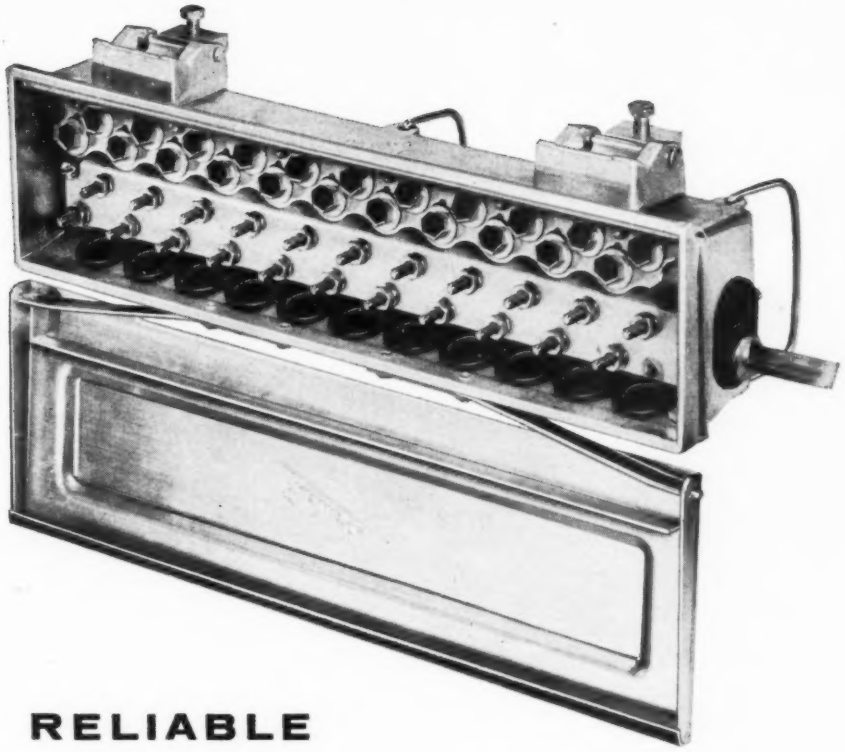


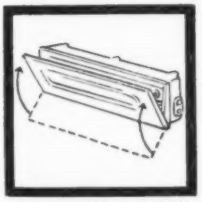
RELIABLE
STRAND MOUNTED TERMINALS

Whether the plant employs protected or unprotected type cable terminals the design and dependability of the Reliable Strand Mounted Terminal upholds a forty-eight year old reputation for thorough engineering and thoughtful design.

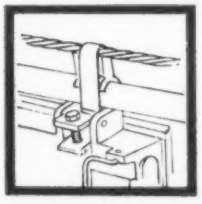
For example: The silicon bronze binding posts on which the cable stub wires are terminated are sealed, with the wires, in a glass-reinforced, polyester resin—a material with exceptionally high dielectric qualities. To minimize, if not actually eliminate surface leakage, binding posts are generously spaced ($1^{1}/_{16}$").

Where protection for either the cable or the station is desired the new Reliable Fuseless Protector Unit will dissipate static discharges across the elements to ground. With repeated heavy discharges, with fault currents or with power surges, carbons are shunted as the attendant heating permanently closes a metallic circuit to ground. Illustrated information will be mailed on request.

Protector unit—No. 506 for cable, No. 504 for station.



Positive closing patented cover opens—closes easily.



Single screw clamps tighten and lock mounting strap

Reliable

RELIABLE ELECTRIC COMPANY CHICAGO

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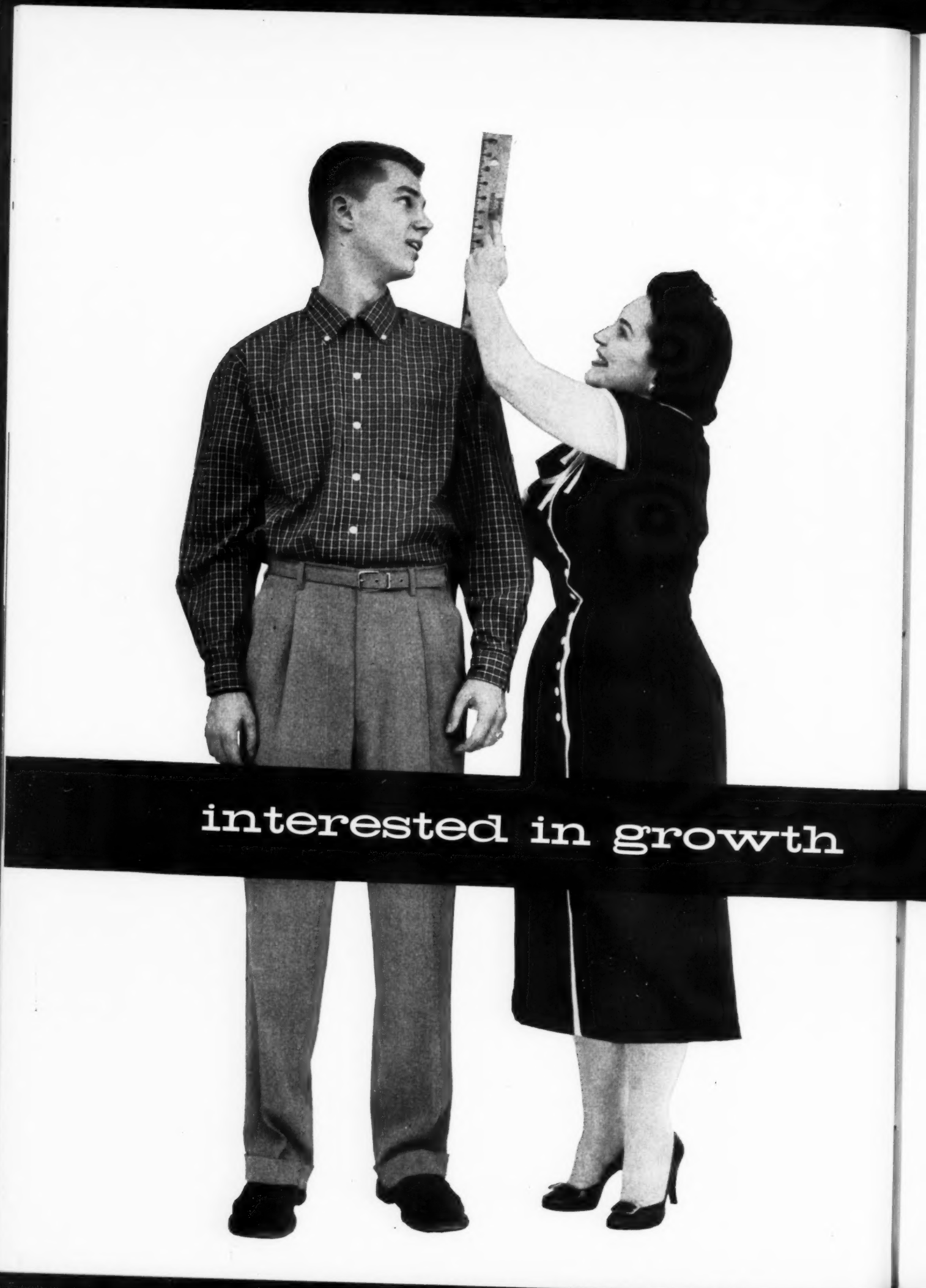

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Look how toll revenue is growing!

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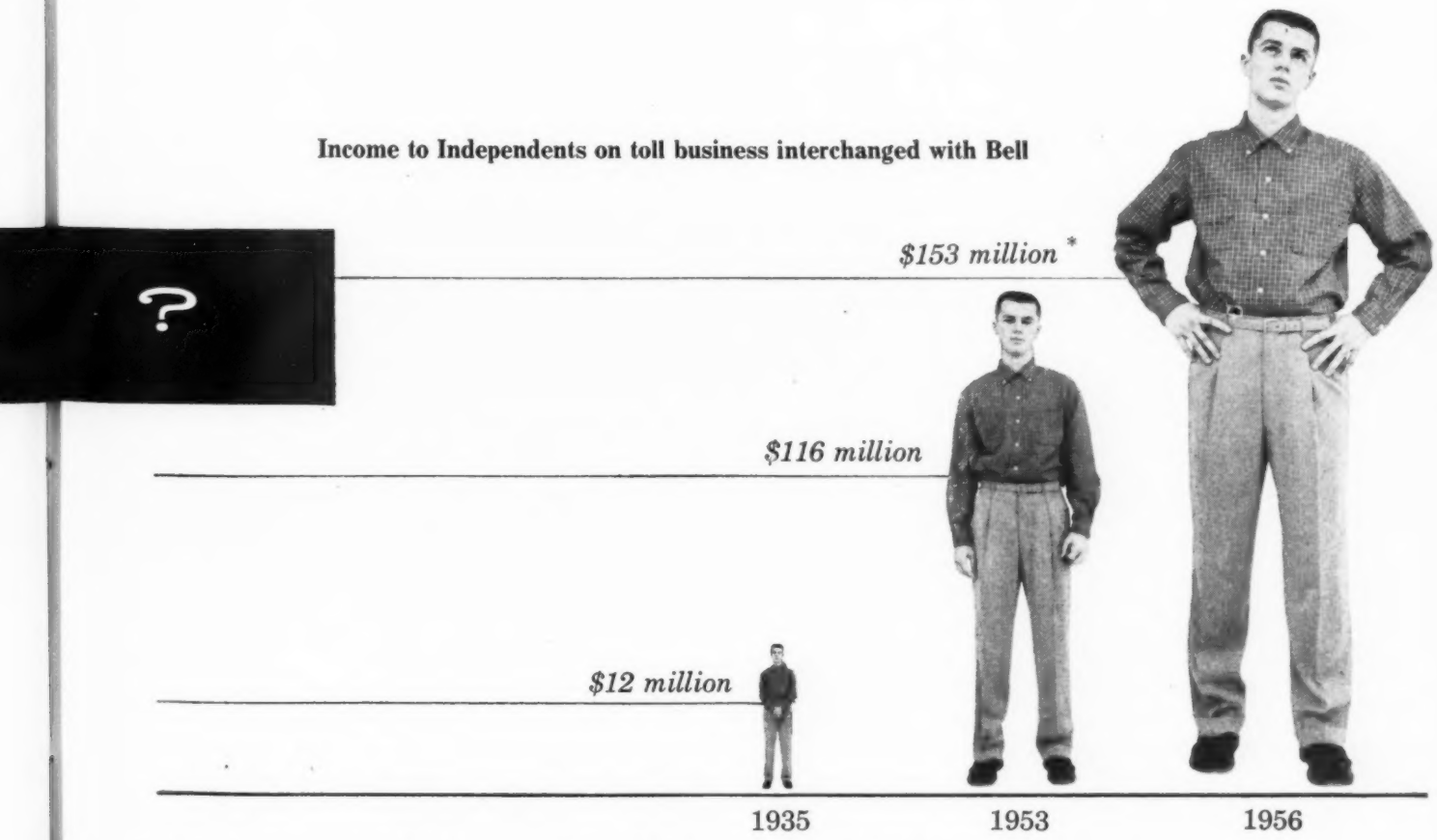

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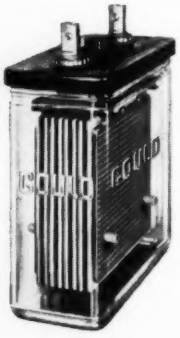

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60 Years of Independent Telephony

THE YEAR 1957 marks the 60th anniversary of the Independent telephone industry. Although some Independent companies were in existence prior to 1897, it was 60 years ago that the National Telephone Association, predecessor of the United States Independent Telephone Association (USITA), was organized to represent the industry.

TELEPHONY salutes the Independent companies for their 60 years of service to thousands of communities throughout the nation. Independents have been a constructive and vital force in the nation's over-all communications system throughout the years, and their performance constitutes a real mark of achievement.

Our salutation also goes to the officers and directors of the USITA—past and present—for their diligent and efficient work in representing the Independent industry and protecting and promoting its welfare. The association has made elaborate plans for the recognition and celebration of the Independents' 60th anniversary, details of which are covered on another page of this issue.

It is customary to observe anniversaries with much jubilation and we certainly think Independents should joyfully celebrate their 60th anniversary and their long and meritorious service to their communities and to the telephone industry, itself. But, along with the celebrating, we believe that all Independent men and women might well take the occasion of the anniversary to reflect upon the Independent industry's illustrious achievements and history in the communications business; to consider the vital position it holds today, and to contemplate the industry's future course if it is to maintain and enhance its presently recognized sphere of influence in the telephone business and in service to the public.

In thinking of the past, tribute should be paid to the Independent pioneers who, after the Bell patents expired in 1894, met the demand and need for telephone service in smaller towns and cities, which the Bell companies did not elect to serve, by organizing and establishing exchanges. This was the beginning of the Independent industry and, throughout the years, thousands of important rural communities, as well as some large metropolitan areas, have received their first and only telephone service from Independents.

Nor should the Independent manufacturers be forgotten. With the organization of the early Independent operating companies, came the formation of enterprising manufacturers and suppliers to furnish the operating companies with necessary equipment. Throughout the years, the Independent manufacturers have introduced many new and outstanding developments and ideas in the art of telephony—the most notable one being the invention and development of the automatic-dial system. It is safe to assume that without the Independent manufacturers there would not have been, and would not be today, any Independent telephone companies.

Also in reviewing the past accomplishments of Independent telephony, sight should not be lost of the fact that the very existence of Independent telephone companies has probably preserved the telephone industry as a private enterprise business in this country. During the early days of the industry, there was public feeling against private monopoly, resulting in Congress enacting the Sherman Anti-Trust Act in 1890. It seems unlikely that a necessary nationwide public service, such as telephone communications, would have been permitted to exist under a one-company monopoly. On the other hand, it is very likely, that had there been no Independent companies during the agitation against monopolies, the telephone industry long ago would have been nationalized as it has been in nearly every other country in the world.

The Independent industry has come a long way in the last 60 years, and its anniversary also offers occasion for all Independents to consider their status in the present telephone industry picture. Today, Independent companies serve two-thirds of the geographical area of the United States and its territories. Many of the 4,700 Independent companies have met the challenge of modernizing and expanding their plants to fulfill their responsibility of providing up-to-date and adequate service to the public. Many more modernization plans are being carried on, or are on the planning board.

The Independents, through nearly 11,000 exchanges, operate over 9 million telephones; their combined plant investment totals almost 2½ billion dollars, and their combined annual gross revenues amount to around 700 million dollars.

This, in brief, indicates the important role the Independent industry plays in the nation's present telephone network, as it joins with the Bell System to give America the most and best telephone service in the entire world under the private enterprise system.

But, the future will bring more and greater challenges than the Independent industry has faced at any time in its long history. Its 60th anniversary provides a good opportunity for Independent people to consider what lies ahead and what they must and will do to keep their companies up with the parade. A few of the points they will have to give thought to are:

(1) Further expansion and rehabilitation of individual exchange plants to serve the ever-growing population in the areas they serve.

(2) Offering a wider variety of new services which have been and will be developed.

(3) Effecting expanded sales and merchandising programs so as to obtain maximum revenues.

(4) Opening up new avenues of financing which will be needed to cover the cost of modernizing and expanding their facilities.

(5) Adoption of new methods and technical advances in the art.

(6) Adoption of improved business management techniques.

(7) Promotion of management and technical development training programs, together with the recruiting of younger and trained personnel.

(8) Consolidation of more of the really small companies into larger and more economical units.

In our opinion, if the Independent industry is to continue its vital role in the nation's telephone system, and if private enterprise is to be protected, all Independent companies must keep up with changes and progress in the telephone art.

Much of the strength and vitality of the Independent industry during the past 60 years, stems from Independent companies working together and coordinating their efforts through the USITA—on the national level—and the 30-odd state telephone associations. The USITA and its state counterparts have represented the industry in legislative, regulatory and other matters of vital importance to the industry. They have served as clearing houses for the exchange of ideas and for the furtherance of the welfare and objectives of the Independent segment of the industry.

Meeting the challenges that will face the Independent industry in the future, will require more coordination and cooperation on the part of all Independent companies. They have the vehicles for greater teamwork in the national and state associations. One of the decisions they should make during their 60th anniversary celebration, is to give greater support and cooperation to these organizations, not only for their own individual benefit, but for the promotion of the welfare of the industry as a whole.

IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR

Commissions accused of looking backward instead of forward in fixing utility rates. . . . Scores use of original cost in setting rate base in present inflationary period. Telephone industry should study growth and changes in population.

THE RECENT statement of President Frederick R. Kappel of the American Telephone & Telegraph Co., in the annual report to the stockholders for that company, served notice that the rate case is here to stay for awhile. Pointing out that Bell System earnings on total capital remained the same in 1956 as in 1955—despite a slight increase in earnings per share ($13.16 in 1956 as compared with $13.10 in 1955)—Mr. Kappel says that the Bell System is not making enough money to finance the necessary growth.

One of the main difficulties of public utility regulation has been a general tendency on the part of the regulators to look backward instead of forward. Public utility commissions are supposed to fix rates for the future. But they generally do so on the basis of evidence of utility company experience in the past, or in the present—or whenever the time of the rate case might be.

But even an attempt to predict future trends, based on past performance, can be most misleading. This is particularly true in a dynamically expanding industry, such as the telephone business since the end of World War II. Take for example Pacific Telephone & Telegraph Co., the Bell System's fastest-growing major operating company. The head of that company, Mark R. Sullivan, in his annual report pointed out that the rate of earnings in 1956 stayed just about where it was in 1955, and was trending downward at year-end, due to rising costs. Earnings were $9.57 a share of common stock outstanding, compared to $9.82 a share on fewer shares outstanding for 1955.

Pacific's payroll rose nearly 5,000 to 90,773 in the year, and the company's wage expenses rose to 412 million dollars, up 42 million dollars. And taxes, its next largest expense item, took $1.00 out of $5.00 of revenue to total about 150 million dollars. So, Uncle Sam was ringing his cash register merrily. Sullivan predicted that by 1966 "we should be serving at least 11 million telephones instead of six," and have 4 to 5 billion dollars invested in plant instead of 2 billion dollars. That rate of growth might almost be called explosive. How can it be judged or measured by standards of past operating experience?

Since Pacific Tel. & Tel. resembles the mother company, in doing more business without an increase in net profit, we can understand why AT&T's President Kappel has such misgivings about taking care of future growth unless some revenue requirement bottlenecks in certain states can be blown up, in the near future. This is going to mean not only preparing and instituting quite a few new telephone rate cases in 1957, but also should mean *winning* a few rate cases. After all, winning is the only really important conclusion for a rate case, as far as a public utility is concerned, during these inflationary times.

Mr. Kappel said on this point:

"In these times of unprecedented growth, with the need to obtain billions of dollars of new capital from investors, earnings above the present levels are required. . . . Right now, in common with all other business, we are experiencing higher costs of operation, including higher wage costs.

"We cannot escape this, for we must have able people and pay to get them. We have continuously better equipment and operating methods. But the costs that arise from inflation are much greater than these savings."

The telephone industry, including Independents, has certainly had its share of harsh if not arbitrary handling of some rate increase applications. While many state regulatory commissions have tried to cooperate in intelligently granting rate relief, there have been some pretty high-handed adverse rulings. And it is only being realistic to recognize that political pressure—the demand that government agencies do the popular thing—has been responsible.

When we see decisions which strive and strain at every argument that would justify turning down a rate increase, however far-fetched or tenuous, we know that telephone companies are up against some tough sales resistance when they try to sell additional rate increases. But they must be sold, if these companies are to survive and expand as they should, in carrying out their public service obligation.

One of the things which the telephone industry, along with other public utilities, may have to do in this next go-round of rate increase applications, may be to force more showdowns on the age-old but ever-controversial question of cost-versus-value, in determining the rate base. As long as the utility's dollar remained even relatively stable, the argument for using the original cost basis of rate regulation (and treatment of depreciation as well) had considerable support in economics as well as logic. Such a regulatory technique is stable (in terms of dollar accounting at least). It is convenient and it is easy to ascertain.

But, with new inflation breaking open the restraining bonds with which the Eisenhower administration strove to stabilize rising prices, public utilities are going to be in a bad way if their rates are constantly being shackled to a past cost basis of experience, instead of being keyed to the requirements of the future along with a recognition of the present.

Under the present system of regulation, in most states, a telephone company's assets must be replaced at greatly increased prices when they are

worn out. It is forced to go out and raise more capital to supplement the funds in a depreciation reserve accrued on an original cost basis. The fact that the "original cost" of the replacement, goes into the rate base at a higher price, for some future day of reckoning is only a postponement of the issue. It is not an answer. It is a practice which makes regulation a sort of check kiting operation, whereby the ratepayers of tomorrow pay for the service of today and, in turn, they pass on *their* higher operating costs to still a future generation of ratepayers. Meanwhile, the utility never catches up; and the investor is always behind.

Prior to the Hope Natural Gas Case (1944) and several previous similar decisions of the U. S. Supreme Court, reproduction cost of assets employed in utility service had been widely considered in determining how much a utility should earn. But in the Hope case the supreme court held that no single formula should be controlling. It held that the utility should just earn enough to keep its securities as attractive investments and the company healthy financially.

Public service commissions, following the Hope case, have more often than not employed original cost as the basis for evaluating property and determining fair return. This has resulted in utility shareholders earning less in times of rising prices than they would if the return were based on the rising dollar value of the property. In other business endeavors, when prices rise, the owners generally find their return also rises in terms of dollars, since the companies they own are worth more in dollar terms.

All public utility industries, when they seek a return based on replacement cost, must realize that this is a two-edged sword. In a period of declining prices, allowing replacement cost in utility regulation would mean that stockholders would get a lower return on property built when prices were higher than they would if original cost criteria were kept. Yet, these utilities may be willing to have this cyclical approach to their profits replace regulation that tries to keep their return stable in terms of dollars—irrespective of price movements.

Economic justice would seem to decree that the meal we eat today ought to be paid for today, at today's prices; and not paid for tomorrow, or at some other time in the future, but *still* at today's prices. Under strict cost base rate regulation, public utilities for many years have had to eat up present-day investment worn out in present-day service and then pass the bill for replacement cost on to the unknown future. Since the general trend of prices ever since the Roman Caesars has always been upward, this system leaves the utility investors constantly in the position of holding the rate-payers' "I. O. U." There certainly ought to be some better way to fix rates more realistically keyed to present day-to-day requirements.

Changing Population

Last week the great big electric brain indicator in the lobby of the Department of Commerce in Washington, D. C. rang up a new record for population in the United States. Our number now exceeds 170 million people, and it is growing more numerous all the time.

Linked as it is with the population growth, the telephone industry is naturally interested not only in the net amount of this constant increase, but the relative trends in different areas. For some years there has been a migration from the Middle West towards the coastal region. For some years there has been a shift of industrial enterprise from New England towards the South. The reasons for such changes have usually been economic, such as relative costs of transportation, labor, materials, and the changing markets for business products.

But weather too has an important effect on population shifting. And even more important, from the standpoint of our drought stricken southwestern areas, has been the possibility of supplementing their water supply.

How much more can California grow, for example, on its present water supply—before the population begins to stagnate and the trend reverse? And what can be done about the arid wastelands of the southwestern desert country and the dustbowl country? One fascinating possibility of relief is the age-old dream of converting sea water into potable water for human use.

While at first glance the discovery of a method for practical and economical conversion of sea water would seem to benefit directly the coastal cities, the indirect effect might well benefit interior areas which are now arid and deserted.

Our techniques of pipeline building for natural gas and oil have reached the point where their use for irrigation and supplementing drinking water supplies would be very much indicated, whenever a feasible means of sea water conversion could be demonstrated.

Last week the Assistant Secretary of the Interior, Fred G. Aandahl, addressed the National Farm Institute at Des Moines. And he had some wonderful news about the work now going on in connection with sea water conversion experiments. "The prospect," he said, "is exciting." The advances that have been made are even now in concrete form. One pilot plant will soon be set up on the Carolina coast. Already, production cost has been cut experimentally to 60 cents a thousand gallons—a third of commercial costs at present. Mr. Aandahl expects this cost to be steadily reduced.

Farmers are interested in insurance against drought and the feasibility of such insurance was hopefully set forth. But, Mr. Aandahl gave especial attention to the problem created by a growing population, and especially an urban one. This will put a progressively heavier burden upon water supplies of every character. By 1975, he estimates, our national water needs will be about 453 billion gallons a day.

Natural underground supplies can be expected to shrink, not expand. While more and better work is being done in the conservation of run-off, that is a slow and costly process. Whether such partial and remedial measures can keep pace with the growing need is problematical. In due course, Mr. Aandahl believes atomic energy can be used to carry the load of gigantic pipeline systems that can bring fresh water to every part of the country where it is needed.

Aside from supplementing the present water supply, the discovery of a commercially feasible method for desalting sea water would render obsolete much of the vast and costly irrigation work now being done by the federal government at the taxpayers' expense. The so-called multipurpose dams of the Tennessee Valley and the far Northwest have generated more debt and demagogery on the scene of our national political economy than any single campaign issue since the Civil War.

Even foreign countries have a vital stake in such discoveries which could literally make the deserts fertile and increase food supplies for undernourished populations in the areas. France, Israel, India, and Pakistan and the vast arid regions of Central Asia may one day be served by experiments now being conducted in our own country.

So, once again, the gloomy prophecy of Dr. Malthus, who two and a half centuries ago predicted that the fertility of the human race would surpass the resources of the earth to support it, may suffer another defeat at the hands of science and intelligent enterprise. In its own way, news of progress in desalting sea water is, as Assistant Secretary of the Interior Aandahl says, one of the most exciting pieces of news out of Washington for many months.

REA Makes Seven Loans Totaling $1,253,000

Seven telephone systems in Louisiana, Iowa, North Carolina, Oklahoma, South Carolina and Texas will improve and expand service in rural areas as a result of $1,253,000 in loans made the week of Feb. 11 by the Rural Electrification Administration. Details of the seven loans for modern automatic telephone facilities announced by the U. S. Department of Agriculture follow:

Elizabeth (La.) Telephone Co., Inc.; $368,000, first loan (Feb. 11).

The borrower proposes to convert to automatic, to furnish initial service for 454 rural families now without telephones, and improved service to 415 existing subscribers. At present the company furnishes magneto service.

New construction proposed by the company includes a combination automatic central office and headquarters building in Elizabeth.

Mrs. Helen Sigler Prevey is manager of the Elizabeth Telephone Co.

*

Webster-Calhoun Cooperative Telephone Association, Gowrie, Ia.; $184,000, third loan (Feb. 15).

The borrower will improve service for 348 subscribers and provide service for the first time to 9 farm families.

The cooperative plans to acquire the Farnhamville Mutual Telephone Co., now furnishing magneto service.

New construction scheduled includes an automatic central office in Farnhamville.

A portion of the loan will be used to finance the construction of a new headquarters building in Gowrie.

The three REA loans totaling $772,000 will enable the cooperative to provide new and improved service to 1,740 farm families. The system will consist of 390 miles of line and automatic exchanges at Barnum, Farnhamville, Gowrie, Knierim, Moorland and Somers.

Anton Holmer is president and Howard Rude is manager of the Webster-Calhoun telephone cooperative.

*

Randolph Telephone Co., Liberty, N. C.; $100,000, second loan (Feb. 15).

The company will offer automatic service to 194 additional new subscribers not provided for in the first loan. Part of the loan, together with funds from the first REA loan, will finance a combination headquarters and automatic central office building in Liberty.

The two loans to this borrower totaling $337,000 will provide new and improved service for 849 subscribers. The company expects to cut over to automatic in June.

W. M. Fitzgerald is vice president and manager of the Randolph Telephone Co.

*

Hinton (Okla.) Telephone Co.; $156,000, second loan, to furnish dial service to 147 existing subscribers and 93 farm families now without service. (Feb. 15.) The Hinton company proposes to acquire the Lookeba Telephone Co. now furnishing magneto service to 54 subscribers and 47 switchers.

The company's construction schedule includes a new automatic central office at Lookeba.

The two REA loans to this borrower, totaling $375,000, will make possible new and improved service to 778 subscribers. The system will consist of 255 miles of line and automatic exchanges at Hinton and Lookeba.

John R. Hollis is president and manager of the Hinton Telephone Co.

*

Farmers Telephone Cooperative, Kingstree, S. C.; $268,000, third loan (Feb. 15).

With these funds, the borrower plans to serve additional territory in Lee County. The proposal includes dial telephones for 428 rural families not now served and for 72 existing subscribers. Of the latter, 47 are now receiving magneto service from the South Carolina Continental Telephone Co. over 28 miles of rural line in the Bishopville area which the borrower plans to acquire; 17 are switchers of South Carolina Continental who own their own 33 miles of line; and 8 are fire warden stations now being served by the South Carolina Commission of Forestry over 10 miles of line which the Farmers co-op also proposes to acquire.

Construction scheduled by the borrower includes an automatic central office at North Bishopville. The new automatic office will serve rural subscribers in the area around Bishopville but not the town itself.

The three REA loans to the cooperative, totaling $2,311,000, will enable it to provide new and improved service to 4,490 subscribers. Eleven of the proposed 12 automatic exchanges are in operation, serving 1,975 subscribers.

W. B. Davis is president and R. D. Guerry is manager of the Farmers Telephone Cooperative.

*

Home Telephone Co., Moncks Corner, S. C.; $82,000, second loan (Feb. 15).

The borrower will use these funds to provide facilities to serve 211 rural families in its service area not included in the first loan.

The two REA loans to the Home company total $542,000, with which it expects to offer new and improved service to 1,411 subscribers. The system will consist of 300 miles of line and automatic exchanges at Jamestown and Moncks Corner. Service without toll charge is planned between the two areas.

S. S. Helmly is president and manager of the Home company.

*

Santa Rosa Telephone Cooperative, Vernon, Tex.; $95,000, seventh loan (Feb. 15).

The borrower will use these funds to extend its operating area into Jackson County in Oklahoma to improve service for 75 subscribers and provide initial service for 70 farm families. The existing subscribers are now receiving magneto service from the Elmer (Okla.) Telephone Co., whose facilities the cooperative plans to acquire.

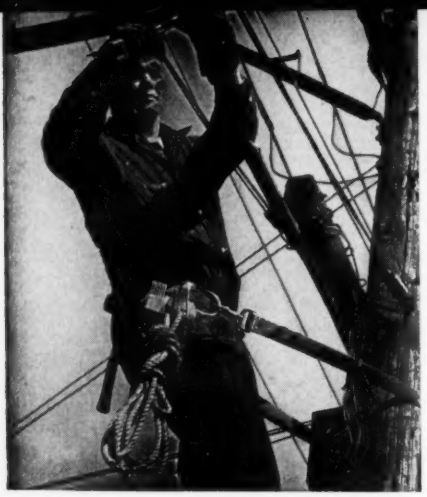
The Santa Rosa borrower expects to construct a new automatic central office at Elmer.

REA loans now totaling $1,105,000 will enable the cooperative to provide new and improved service to 1,699 subscribers. Eight of the 12 proposed automatic central offices, all located in Texas, are now in operation.

This is the first borrower to receive as many as seven loans from REA.

Richard Kempf is president and Carl Freeling is manager of the Santa Rosa Telephone Cooperative.

XUM



THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

WE HAVE ARGUED often during the past few years—and have frequently made mention of the fact on this page—that the services of operators could be dispensed with on hotel PBX switchboards providing the proper equipment is provided.

Furthermore, we have stated that any of the dial switching and automatic ticketing systems of Independent manufacture could be arranged to provide this service.

We now note with considerable interest that the Sheraton Corp. of America has said that it believes they have the answer to the problem of cutting losses on hotel telephone service and that they may be able to put this operation on a profitable basis. This new plan, so-called, is automatic dial telephone service for guest rooms, part of a package program worked out by the Sheraton corporation and the New England Telephone & Telegraph Co., after more than a year of study.

It is reported that the dial system in nearly 500 rooms in the Sheraton Plaza Hotel in Boston will provide automatic and cumulative billing on all local calls from every guest room in the hotel. It is further stated that the billing information will be obtained from a meter board at the cashier's desk that will also speed the preparation of bills for checking out guests. This is undoubtedly some form of automatic ticketing that is now in general use throughout the Independent field.

The Sheraton Plaza will be the first hotel in the United States to have the new system which, it is reported, will be in operation this spring. If this installation comes up to expectations, its installation in all Sheraton hotels is planned.

An American Telephone & Telegraph Co. spokesman is reported to have said that at least one other hotel, the Waldorf-Astoria, in New York City, owned by the Hilton Hotel Corp., is experimenting with a new system similar to that planned for the Sheraton Plaza; however, its installation is not planned for some months.

With the new system, a guest leaving a morning call will be awakened automatically by a sweet feminine recorded voice which will inform him of the hour and suggest an attractive breakfast menu at the hotel restaurant.

The order for valet service given by a guest after hours will be recorded on an automatic answering device.

When a guest returns to his room and finds a light signal on his telephone it will be an indication that there is a message for him which can be obtained by dialing a code number listed on a chart near the telephone.

•

The world now has six cities with more than a million telephones each. They are: New York, Chicago, London, Detroit, Los Angeles and Washington. The nation's capital was just added to the list in early 1957.

•

We have received an interesting letter from Burrell Taylor, combination man for the Crossville (Ill.) Telephone Co. He describes a combination man as a jack of all trades and a master of none. His letter states in part as follows:

"I have just read and enjoyed the letter from Mr. D. E. McGregor, describing his method of locating cable trouble. I have been using this method of breaking down cable pairs for the past year. I have often wondered if anyone else ever used a transformer instead of 'B' batteries for this purpose.

"I have read about the use of 'B' batteries to break down defective cable pairs and wondered why A.C. could not be used for this purpose. I attempted to locate a suitable transformer but none seemed available that I could buy.

"I tried a power transformer from a radio set that had an output of from 300 to 500 volts. I found that the amperage was too low as the high voltage burned the paper insulation but it would not weld the conductors.

"Next I attempted to build a transformer that would produce the proper current and voltage for use in breaking down insulation in a wet cable. This may not sound possible to anyone experienced in building transformers but I took some flat iron ¼ inch thick and made a transformer core by welding the pieces together. Bought magnet wire and wound a transformer coil to match this core.

"This is a multi-stage transformer with secondary taps for 110, 220, and 400 volts. My purpose for the multi-stage transformer was to use the 110 and 220 volts to flash cable pairs that were fairly easy and the 400 volts for the more difficult troubles.

"Mr. McGregor states that he makes use of a 600-volt transformer. It seems to me that 600 volts would be rather high as the dielectric strength of most paper cable pairs is only 700 volts.

"It would seem that 300 or 400 volts should prove adequate to break down a cable pair that has a leak that will cause trouble. This voltage should not cause trouble on the adjacent clear pairs.

"As Mr. McGregor stated, there is a certain element of danger involved in using a high voltage transformer for breaking down cable trouble. I can see no immediate danger, however, if all telephones are disconnected from the line being flashed."

We will welcome the opinions of other readers on this method of flashing cable pairs to locate high resistance trouble.

•

A line of drive-in restaurants in Washington, D. C., are surrounded by large parking lots and serve customers in their cars. Speaker-microphones are attached to pedestals by Koiled Kords and can be drawn into the cars to order. The menu is posted on the pedestal and orders are given to the operator by merely pushing the button on the speaker-microphone.

Recently two small boys were no-

ticed wandering through the parking lot at one of these restaurants. Finally they approached a pedestal, pushed the button on the speaker-microphone and talked to the operator. This was considered horseplay, but when the car hop appeared with two cokes they paid her for them. They then leaned against the pedestal, sipped their drinks and went casually on their way.

•

We tested a screw-driver of the screw-holding type recently that appears to be near-perfect.

The blade of this tool is hollow-ground and fits any slotted screw. The blade is also split on a taper and the two halves are wedged together in the screw slot by a washer arrangement that is pushed away from the handle until the proper pressure is applied to the screw slot to hold it firmly on the bit.

This tool should prove ideal for starting screws in hard-to-get-at places. Sizes are available to fit screws from No. 0 to No. 24.

•

A new type of tamper, not much larger than a power lawn mower, and which operates in much the same manner, is now available.

Powered by a 3.4-hp gasoline engine, this self-contained unit delivers more than twenty-two hundred, 1800-pound impacts per minute. The unit is self-propelled with working speeds of 15 to 45 feet per minute.

It vibrates as it tamps and should prove ideal for backfilling trenches for underground cable under paved streets. It is also equipped with semi-pneumatic tires and detachable wheels and handle.

•

The first electric wrist watch has recently been placed on the market. No larger than the conventional variety, it is not equipped with a mainspring or winding stem, but is powered by a tiny battery the size of a shirt button. Having only one-third the parts of an automatic wrist watch, it runs at least a year on one battery. The manufacturer claims that it is 99.995 per cent accurate.

•

During the last 15 years, 19 different countries have issued 27 different postage stamps featuring the communications industry. Alexander Graham Bell has been honored on stamps issued by the United States, Canada and the Argentine.

Plant Man's QUIZ

By RAY BLAIN, Technical Editorial Director

Q. What is the standard color code used in quadded cable?

A. To reduce or prevent crosstalk between the three circuits of a quad, the circuits are transposed against one another by having a different length of twist to each of the pairs and twisting the two pairs that are required to form the phantom with still another length of the twist.

To prevent crosstalk between the circuits in this quad and those in adjacent quads in the same layer, these pairs and phantoms are given other twists.

In addition to these two types of quads with different lengths of twists, another of a third type is placed in each layer. The purpose of this third type is to prevent the closeness of similarly twisted quads occurring in layers containing an odd number of quads. This would happen if only two different types of quads were used.

Identification of the three different types of quads is made possible by the color of the insulation. The two wires of a pair have the same color. Identifying colors may differ with various manufacturers but the following is standard with one company:

Type	*Pair 1*	*Pair 2*
1	White	Blue
2	Green	Red
3	Orange	Red
Tracer	White	Orange

•

Q. Please advise whether a first aid kit for the treatment of snake bites is now available.

A. Yes there is a small first aid kit for the treatment of snake and insect bites. This kit is only 3 inches long, weighs 1½ ounces and includes three suction cups, a knife, a bottle of antiseptic and a tourniquet.

Of the three suction cups, two are large, offering a wide gripping surface to facilitate application to the arms and legs or other areas. The smaller suction cup is for use on fingers or other narrow gripping areas.

The lymph constrictor, or tourniquet, is used to dam the venom in the region of the bite and prevent its general circulation.

The knife is used to make cross incisions over each fang mark and in surrounding areas where necessary.

•

Q. We have considerable trouble in stripping the new rural "C" line wire. Can you please advise what tools should be used for this purpose?

A. It is suggested that you procure and use a special slitter and stripper recently developed for this purpose.

This tool is only 7 inches long and weighs but 8 ounces. The slitting and stripping knives may be replaced as required.

We are certain that you will find that this tool not only does a good job but that it is also a real labor-saver.

•

Q. We'd like to know what is considered the best method of protecting a lead sleeve splice in buried armoured cable?

A. Various types of protection are used but perhaps the best method is to make use of a splice box especially designed for this purpose.

These boxes consist of two iron castings that clamp tight over the cable and are held in place by bolts. The matching surfaces are ground smooth to provide a good tight fit.

•

Q. We'd like to know whether it will be necessary to provide heat in the room housing the storage battery in an unattended dial switching exchange?

A. Storage batteries are generally affected adversely by temperatures of about 15° F. At this temperature crystals form in the electrolyte which causes a reduction in the reserve capacity of the battery.

For this reason heat should be used in the battery room as required to maintain a temperature above 15° F.

XUM

THE Operator's Corner

By MAYME WORKMAN — TRAFFIC EDITOR

IT IS ALWAYS A PLEASURE to have an opportunity to write about the Hawaiian Islands and the telephone folk I met there during the ten delightful days I spent on the Islands some time ago.

Recently I received a letter from Mr. Charles Penhallow, secretary of the John A. Balch Chapter of the Independent Telephone Pioneer Association, and an employe of the Hawaiian Telephone Co. in Honolulu, on the island of Oahu, in which he stated: "You may be interested in hearing about an interesting experience we had last week, which concerns you a little bit." Of course, I was interested and eagerly read every word of Mr. Penhallow's letter.

According to Mr. Penhallow, and I quote his words which tell the experience in a most interesting and delightful manner, "While I was in California in October, Bob Fischer, who had been secretary of the John A. Balch Chapter during the 1954-55 fiscal year, (which was the year I visited the islands), received a letter from a Miss Vera Cash, Brisbane, Australia, stating that she was an employe of the Government's telephone system and was planning on coming to Honolulu on the tour ship 'Oronsay', arriving Nov. 23, and would be interested in meeting and talking with some telephone people. She did not say how she got Bob's name, but we concluded that it was through the Independent Telephone Pioneer Association, since he was addressed as secretary of the chapter.

"Bob referred the letter to Bud Pente, president of our chapter, who replied that someone would meet the ship when the time came for its arrival. Last week a committee was appointed for that purpose and when the ship docked, Bud, Reiko Kimura, and I, all loaded with leis and properly fortified with the passes necessary to get us by customs and aboard ship, went aboard and greeted Vera and her traveling companion, Miss Shirley Hughes."

Having received a similar greeting when I arrived in Honolulu aboard a Pan-American plane, I can appreciate the delight and pleasure of the girls from Australia when the committee welcomed them to the beautiful island of Oahu. For the benefit of the readers of this column who may not have been presented with a lei in the traditional Hawaiian manner, when the flowered lei is placed around your neck, you are also given a kiss of welcome. What a thrill!

Mr. Penhallow went on to say: "Vera explained that she had been in the telephone business for about 15 years, that she was formerly a 'telephonist' (telephone operator), and is now a clerical assistant in the plant development section of the traffic department. And then she explained how she got Bob Fischer's name: She had read it in your articles in TELEPHONY on your trip to Hawaii last year! She went on to explain that they read TELEPHONY avidly and especially 'Mayme Workman's column.' Don't you feel honored?"

Of course, it is thrilling to know that some one in far off Australia is a reader of "The Operator's Corner," an honor to be shared with TELEPHONY for its wide circulation. I hope Vera and Shirley will read this issue telling about their visit to Hawaii.

Mr. Penhallow stated: "We made a quick tour of the telephone building, and then had one of those fabulous luncheons at The Willows, ending, of course, with coconut cream pie, one of their specialties. Chief Operator Thelma Wilson, joined us for lunch, then we stopped by my home at Kahala so I could pick up my car and take the visitors to the site of the new transpacific cable station at Haunama Bay, while Thelma, Reiko and Bud returned to their respective offices. From the cable terminal I took them to the inter-island telephone station at the top of Tantalus, 2000 feet over the city, and at 3:30 picked up Bud for the long ride to another inter-island telephone station, located in the Waianae mountains at Manuna Kapu, at 2700 feet elevation.

"The girls had been up since 5:00 a.m. and appeared tired, so we showed them the location of a good restaurant within walking distance of their ship and assumed they wanted to retire early, only to find the next day they had been up until 4:30 a.m.

Who can blame them? You don't get to Hawaii every day so you may as well make the most of it. You can always sleep when you get home, I say, and believe me I followed that custom when I visited the islands.

According to Mr. Penhallow: "We had many a laugh over slight language differences, and after a number of misunderstandings, made sure we were all thinking of the same thing when we spoke. For example, Bill Kea asked, 'How many stations are there in Brisbane?' Vera replied, 'Eight or nine.' To them, a telephone is a telephone, and a station is a central office. They also commented on our preparations for the 'I' bomb, and it took a few minutes to realize they were referring to the 'A' bomb.

"Friday night Vera and Shirley had teamed up with some of the men from the ship, who had rented a car, and before the evening was over had been stopped by the police for driving the wrong way on a one-way street. Their comment was that the police officer 'was a young chap but he bawled them out for fair and didn't even crack a smile.' "

Saturday the girls were up at 7:30, according to Mr. Penhallow (excuse me, Charles, I'm just trying to be dignified, not formal, by referring to you as "Mister,") "after only three hours of sleep, and they got in as much sightseeing and beach time as possible before we picked them up again, this time bound for the usually beautiful ride to the Mormon Temple at Laie. Unfortunately, rain and a potent drink at Bud Fischer's house on the way delayed us and we had to turn around before reaching the temple. We left

(Please turn to page 44)

Part 28 (Continued)

If we accept the delineation and act upon it, we'll improve ourselves amazingly. After all, the really big person readily admits when he is at fault. It is only the fellow of small stature who can never be wrong.

But let us say, the person doing the criticism is one of those rare individuals who gets a kick out of hurting someone, the fellow who shoots barbed words without apparent motive and without caring much where they land or how much anguish they bring. Put that under a magnifying glass and you will come up with the same answer that logic would give you—those unkind people hurt themselves far more than they do us. We can even profit from their unkind words. While the remarks rarely throw any helpful light on our own character—they expose the person who makes them and reveal the secret fear or hatred which lies like a cancerous abscess at the base of their bitter words.

Every person has a hidden story that makes him what he is or isn't. The world is filled with hurt and mentally incompetent people. We read about them in the newspapers every day—big people, people that bring headlines. As long as we stay on this earth, we will have to abide with such people.

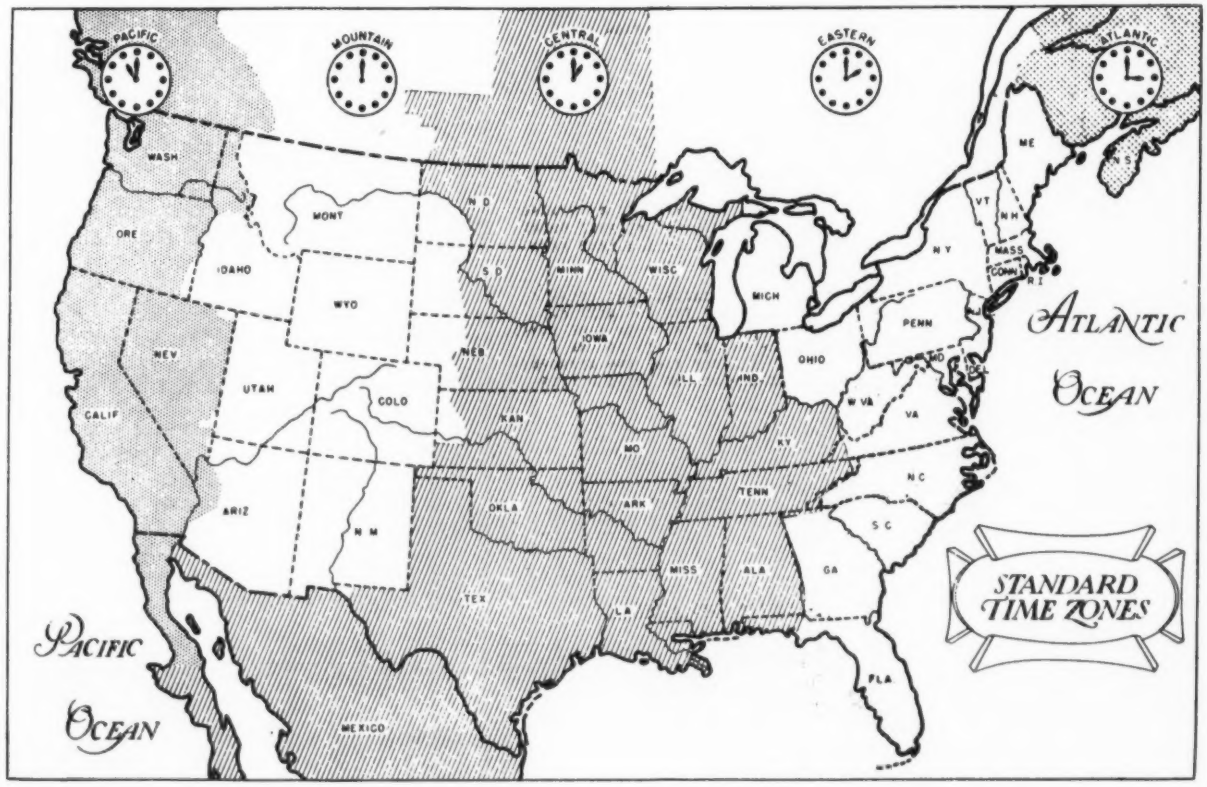
We will never be able to successfully deal with anyone until we know his hidden story and we'll never hear the story if we hide from him or if we are not able to take him as he is with all his wiles and artful slyness, regardless of the bruises to our ego.

Why do we lay such stress on self-respect? Most of us respect ourselves far too much to attempt any changes. Probably, what we most need is a good old-fashioned criticism that will shake us out of our smugness and show us what complete washouts we really are.

Remember this—criticism does reveal the truth—either about you or the other fellow. Don't dodge it! Don't resent it! Look at it as the big break—all in your favor.

And for yourself—if you are quick to criticize, if you get satisfaction out of doing it—"Watch out!" you are on the wrong track. If you dislike criticising—that's fine! You will use the suggestion method instead of criticising.

(The End)



Toll calls will be completed with more speed if placed outside the busy hours which are 9:30 to 11 a.m. and from 1:30 to 3:30 p.m. When placing toll calls, particularly at the beginning of the business day, to a city in any of the four time zones, consideration may be given to the differences in clock time and appropriate allowances made for these differences. *For faster long distance service—"Call By Number."*

Outside and inside views of pole-type building of Wabash Rural Electric Membership Corp.

Pole-Type Building Solves Utilities' Storage Problems

By GORDON SEARS*

WITH AN extensive system study in progress and the heavying up of member services, dock facilities in the headquarters building of the Wabash County Rural Electric Membership Corp. of Wabash, Ind., became inadequate last year.

Faced with this shortage of storage space, Wabash County REMC directors reviewed several types of construction principles and building materials before recommending the most economical yet serviceable structure.

Several solutions to the problem were rejected. Rental space could be only a temporary expedient, while the usual standard design building would require several weeks to erect and would be rather costly.

A pole-type building, economical and quick to build by small crews, was decided upon because of its economy and because it would serve as a show building to REMC members who might be interested in putting up a pole-type structure.

The story of the pole-type building should be of interest to telephone companies faced with the problem of providing buildings for storage of equipment, supplies, vehicles, etc.

All work on the planned 40-foot by 60-foot building was contracted out and the total cost was $4,500, or $1.90 a square foot of floor area. Included in the package were 12-foot overhead doors at each end, sky lighting, aluminum siding and roof, gutters and concrete floor. The building contains no windows but, instead, features 132 square feet of plastic skylighting.

The large doors permit semi-trucks to drive through the building and set off large transformers, reels or wire, etc. The building houses mostly line hardware, reels of wire and transformers that need to be kept out of the weather.

With all of these construction features, cost of a more conventional building would approximate twice the cost of a pole building.

In pole-type buildings, foundations, complicated framing and other expensive elements found in many conventional buildings are largely eliminated. Instead, poles somewhat shorter than the average utility pole are placed in the ground at the perimeter of the building and at strategic positions through the interior. These foundation poles can be installed more quickly and at lower cost than conventional foundations.

The Wabash REMC further decreased its costs by utilizing "second hand" poles from its own inventory.

Inspiration for the industrial pole building like this originated on the farm. This type of construction was utilized extensively a century ago when the farmer took the straight, durable virgin timber from his land and trimmed it into poles.

Though it continued to serve its purpose well, the pole farm building became obsolete when readily available native timber was exhausted, since second and third-growth timber tended to rot rapidly. This decay sharply reduced the life span of the building and sent depreciation costs soaring.

A decade ago, the pole-type building was revived and its popularity looks unending this time. Development of modern wood-treating processes and new preservatives account largely for the renaissance and bright future of this type of construction.

Penta-treated poles were selected for

*Mr. Sears is with public relations department of The Dow Chemical Co.

the Wabash County Rural Electric building because they are clean, easy to handle and have little or no odor.

In pole-type construction, baseboards as well as poles are preservatively treated to resist termite and rot attacks.

Acceptance of the more recent trends to pole-type buildings on farms created a demand for specialized contractors who could erect the structures quickly and efficiently. During the past two years, their work has expanded into the industrial field. These firms, which have plans and engineering services, dot the country. With the deftness of circus hands, their three to five-man crews often swing into action on Monday and leave the following Saturday with their building completed.

In addition to being economical and quick to erect, the pole building has stood its ground in the face of severe weather conditions. Because poles set deep into the ground act as the foundation as well as serving to tie the building together at the peak, pole buildings are actually more resistant to wind damage than conventional buildings.

When Hurricane Hazel swept up the East Coast three years ago, it carried away almost everything in its path at one Maryland site. A pole-type cattle auction building was an exception. Its only damage was a hole caused by flying debris.

And pole buildings have provided owners with advantages in materials handling. When the Boone County Farm Bureau Co-op of Lebanon, Ind., built a 6,240-square-foot warehouse, materials handling facilities were important factors in the selection of a pole-type building. Platforms, ramps and large unobstructed footage within the building enable lift trucks to move freely to and from railroad cars and trucks.

Another business firm, Gurtler & Hebert Co. of New Orleans, La., provided the versatility of a pole building by adding extra poles to support a mezzanine. This company was thereby able to add 4,000 feet of storage space, easily accessible to fork lift trucks, without increasing the size of the building.

Pole-type construction is the answer to the businessman's dreams of writing off new buildings as quickly as in the past despite rising construction costs. Normal cost of constructing a pole building is between $1.00 and $2.00 a square foot although substantial attractive structures have been built for much less.

Business men report that conventional warehouse construction normally costs $4.00 or more a square foot. Also, the greatly reduced building time has saved firms thousands of dollars.

Many city building codes allow pole buildings in restricted zones. Others are being revised rapidly to permit this construction. Hundreds of these buildings have been put up within city limits.

Now that pole buildings have shed their onus of "temporary," and are being designed to conform to neighborhood architecture, their future appears unlimited in their commercial building applications just as it is on the farm.

To illustrate examples of industrial pole-type construction, which are adaptable in the telephone industry, The Dow Chemical Co. has published a booklet, "Low Cost Buildings For Industry." Copies may be obtained free of charge by writing to PEN 21, The Dow Chemical Co., Midland, Mich.

1957 Convention Calendar

Association	*Date*	*City*	*Hotel*
Southern Counties of Ontario	Mar. 19	Chatham, Ontario	William Pitt
Texas	March 28 and 29	San Antonio	Gunter
Iowa	April 2 and 3	Des Moines	Fort Des Moines
North Dakota	April 8 and 9	Fargo	Gardner
Ohio	April 16 and 17	Columbus	Deshler-Hilton
Nebraska	April 23 and 24	Lincoln	Cornhusker
Indiana	May 8 and 9	Indianapolis	Claypool
Wisconsin	May 15 and 16	Madison	Loraine
Communications Section, Association of American Railroads	May 21, 22 and 23	Toronto, Ontario, Canada	Royal York
Illinois	May 22 and 23	Peoria	Pere Marquette
Kansas-Missouri*	May 27 and 28	Kansas City	Town House
Pennsylvania	June 4 and 5	Buck Hill Falls	Buck Hill Falls Inn
Maine-New Hampshire-Vermont*	June 4, 5 and 6	Portsmouth, N. H.	Wentworth-by-the-Sea
California	June 5, 6 and 7	Los Angeles	Ambassador
Washington-Oregon*	June 13, 14 and 15	Spokane, Wash.	Davenport
New York	June 17, 18 and 19	Schroon Lake	Scaroon Manor
Arkansas	Sept. 16 and 17	Hot Springs	Arlington
Michigan	Sept. 17, 18 and 19	Grand Rapids	Pantlind
Rocky Mountain	Sept. 19 and 20	Salt Lake City, Utah	Utah
North Carolina	Oct. 3 and 4	Pinehurst Carolina	
USITA (Annual convention)	Oct. 14, 15 and 16	Chicago	Conrad Hilton
Virginia	Oct. 24 and 25	Roanoke	Roanoke
Oklahoma	Nov. 21 and 22	Oklahoma City	Huckins
Florida	Dec. 2 and 3	Miami Beach	Balmoral

*Joint Conventions

Power Elected Director of Canada Dry Ginger Ale, Inc.

Donald C. Power, president of General Telephone Corp., has been elected a director of Canada Dry Ginger Ale, Inc., New York City, it was announced on Feb. 20 by R. W. Moore, president.

In addition to holding directorships of General Telephone Corp. and its various subsidiaries, Mr. Power is also a director of Irving Trust Co. and General Public Service Corp., both of New York; The Copper Range Co., Boston; The Columbus Mutual Life Insurance Co. and Beacon Mutual Indemnity Co., both of Columbus.

Power is chairman, section of public utility law of the American Bar Association. He is president of the United States Independent Telephone Association.

REA Names R. L. Allen Telephone Section Engineer

Appointment of Richard L. Allen as head of Section 7 of REA's telephone engineering division was announced on Feb. 15. Section 7 includes the states of North Carolina, South Carolina, Kentucky and Tennessee. Mr. Allen succeeds Harry N. Stafford who recently transferred to another position in government service.

Mr. Allen, a graduate in electrical engineering from Michigan College of Mining and Technology, joined REA in November 1941. He worked in the electric program until July 1952, when he transferred to the telephone program, which he has served as a field engineer and group engineer. Mr. Allen spent three years in military service as a first lieutenant in the Signal Corps working in the fields of aerial wire and cable plant construction.

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Beauty
with a purpose...

For sheer beauty the one-piece, free form design of the North Ericofon stands alone!

In addition to its decorative beauty, the Ericofon has a functional beauty — beauty with a purpose!

The one-piece, upright design makes it lighter, more compact for space-saving efficiency, and puts the dial in the bottom for greatest dialing ease — only in the Ericofon do you have "dial-comes-to-you" convenience.

The Ericofon is truly a beautiful instrument!

To offer your subscribers the Ericofon is to compliment them!

To offer you the Ericofon is our privilege!

NORTH ELECTRIC COMPANY

601 SOUTH MARKET STREET • GALION, OHIO

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"Independent Telephone Week" To Feature 60th Anniversary

THE YEAR 1957 is an important anniversary for all Independent telephone companies of America and for the United States Independent Telephone Association (USITA). While Independent companies were established prior to 1897, it was 60 years ago, in 1897, that the first national Independent association was given birth, and Independent telephone companies became organized and recognized as an industry.

To arrange for a proper celebration of this historic milestone, a Diamond Jubilee Committee has been appointed by USITA President Donald C. Power. Its members are Carl D. Brorein, chairman; Thomas A.Boyd, and Richard A. Lumpkin.

The committee recently met and launched a program of some interesting activities. On or about May 1 a suitable proclamation will be issued by President Power designating a specific period later in the year as "Independent Telephone Week." The proclamation will be embellished with fine printing and will be distributed to all USITA member companies.

Wide publicity will be given to the observance, which offers splendid tie-in advertising and publicity opportunities to all units and ranks of Independent telephony, including operating companies, manufacturers, suppliers and related firms, state telephone associations, and Pioneer groups.

These various groups have been requested to refer to the anniversary in their bulletins, house organs, and other publications. USITA member letters and other mailings now carry at the bottom the following: "60 Years of Independent Telephony, 1897-1957," and each envelope which goes through USITA's postage meter is inscribed with the same words in red ink. All companies are requested to make similar arrangements, and manufacturers and suppliers and related firms are asked to refer to the anniversary in their local and national advertising. Suitable reference to the Diamond Jubilee Anniversary will be woven into the association's national magazine advertisements.

Local Tie-In

Among other activities which can effectively be undertaken in order to achieve suitable publicity and stimulation of public interest during "Independent Telephone Week" are the following: Open houses by Independent companies; local publicity, including appropriate pictures in newspapers; telephone company speakers at service clubs in Independent territory; a limited number of free long distance telephone calls at open houses; use of voice recording play-backs at open houses, and dial conversions.

Convention Grand Finale

The crescendo of the 60th anniversary celebration will come at the annual convention in Chicago in mid-October. Manufacturers and suppliers will be asked to include in their convention exhibits pieces of equipment used in earlier eras. A special exhibit of museum equipment pieces contributed by individual manufacturers is planned for the lobby of the Conrad Hilton Hotel, or in the convention hall during the time the convention is in progress.

An invitation will be extended to President Eisenhower to address the 1957 convention. If he cannot be present, the invitation will be extended to some member of his cabinet, or a representative designated by him.

Other plans will be added as they develop, and all concerned will be notified regarding them from time to time. So far, response to the program has been enthusiastic, according to the USITA.

Direct Distance Dialing

What One Independent Thinks of DDD

By Rodney B. Cummings*

THE INVENTIVE ingenuity of man has created a huge robot whose body and parts are growing so fast that some day they may reach into nearly every home in all countries in the world.

This robot has an electrical and mechanical brain which, by a few directions from its masters, can in a matter of seconds arrange the parts of its great body so that its masters can communicate one with the other over all the country where its thousands of miles of body extend. The masters communicate over its body with the same ease and satisfaction as if they were only a few feet apart.

For years, men all over the world have been inventing, designing and building parts for this robot. Now this robot has really started to grow because a great plan has been drawn up to extend its parts into every home and place of business in the United States. Every part of this robot must fit perfectly if it is to function properly. So a master plan has had to be drawn up.

You may have guessed already that the robot is the great automatic telephone system that already extends to many communities all over the United States. The master plan that is now being carried out faster than any one has ever dreamed it could be, is to convert every telephone system in the country to automatic and to connect all telephone systems together automatically, even timing toll calls automatically and automatically recording and computing the cost of the toll calls—this system is called Direct Distance Dialing (DDD), which we have heard so much about lately.

Conversion to automatic is taking place just as fast as equipment can be manufactured and the projects can be financed and built.

The wonderful improvements in this type of service have created such a demand by the people that it is compelling *all* telephone companies to realize that sooner or later they will be expected to convert to automatic operation. They too, must finance, engineer and plan a plant that will fit perfectly into this DDD plan if they expect to be a part of the nationwide or world-wide telephone system of the future.

Some may hang onto their old system, which they know how to operate and maintain, but sooner or later public

*Mr. Cummings is manager of the Pioneer Telephone Cooperative, Philomath, Ore.

demand will force them to give dial service.

Some *may even think* they can make their own plan and not follow the overall toll dialing plan. But the handwriting is on the wall and sooner or later, I believe every company management will see that they'll have to modernize.

Most people, when they think of a telephone system, think only of what they see—that is, the telephone they use, the poles and wires along the road, or the men and trucks used to build and maintain it. They may also think of the telephone office building and the girls who are doing the billing and operating.

The people (the public) who are to be benefited by the convenience of the modern telephone communication plan that is being created for them, are really the ones who eventually will provide the revenue to make this wonderful communication system possible.

Therefore, I think that we should give them a look behind the scenes so they can see what this "master" plan is going to mean to them. We, who are following this plan, are dependent upon the people we are serving. We must have their help and understanding if it is to succeed.

Our subscribers should know that what they see on the surface is a very small part of their telephone system. They should know that when they make a call they are operating hundreds of small electrical switches. They should be told about the thousands of small wires connecting the equipment, the batteries, charging equipment, the power it takes to operate it, the standby equipment necessary in case of power or equipment failure; also the blueprints and records that are necessary. They should be told how important it is that skilled personnel be on hand constantly to plan for future changes and growth.

Subscribers should be told about the cable they see in the outside plant, and about the hundreds of wires in it; also about the way carrier and radio are used to carry their voices over wires and through the air. They should know that every few miles their voice is being amplified and that it takes special apparatus to keep boosting it as it goes across the United States or even to more distant places in the world.

I think that each telephone company in the United States should do all it can to let the people know about the Direct Distance Dialing plan because the people should know what is in store for them. They should also know of the problems connected with achieving DDD.

We are dependent upon our subscribers for the success of the plan, and I am sure that if they know the facts, they will be just as cooperative and enthusiastic about it as we are.

With their cooperation I know that this wonderful telephone system robot will someday have its parts extended so they can reach into every home in the world.

Peninsular's Popular *Sun Dial* Has 25th Anniversary

FLORIDA'S SMALLEST NEWSPAPER celebrated its 25th anniversary in February, with a circulation nearing the quarter-million mark.

The tiny newspaper, long recognized as the state's smallest by the Florida Press Association, is the *Sun Dial*, published monthly and used as a bill enclosure by Peninsular Telephone Co. of Tampa, Fla. In many Florida homes, the name *Sun Dial* is about as well known as that of the local newspaper.

First issued in 1932, the 232,000 circulation now goes to telephone subscribers in the 100-odd cities, towns and communities on the central west coast area which is served by the Peninsular company; plus a special mailing list to 122 cities in 35 states.

Most out-of-state copies are mailed to industrial concerns, schools and other telephone companies. Some 100 American schools and colleges have asked to be placed on the mailing list, including the far-off Universities of Illinois and Minnesota.

Issues also go to addresses in Canada, Cuba, Hawaii and Argentina. Although the *Sun Dial* has only four pages, 5½ by 7 inches in size, the total number of copies issued since the paper's beginning (more than 22½ million) would, if set end-to-end, reach from Tampa to Los Angeles and back.

The miniature paper is the first and oldest publication of its kind in the Independent industry, points out J. Hartwell Jones, Peninsular's public relations director and editor, and it dates back about as far as most of the Bell System publications. The *Sun Dial* has been the inspiration for several other publications done in similar format.

Mr. Jones, who originated the publication, states that the company's revenue accounting department really prefers an enclosure in sending out bills, as it facilitates the sealing and stamping of envelopes.

However, the *Sun Dial* has always been presented on its merits as a miniature newspaper, not as an advertising piece, bill stuffer or "throwaway".

For, despite its size, the "pint-size" paper contains many of the features found in its largest contemporaries. Probably the most popular is a column of philosophy and fun called "Along the Line", which is carried in each issue. Appearing regularly are editorials, cartoons and other features of the modern metropolitan newspaper. The *Sun Dial's* readers are as varied as those of any newspaper, for, since 95 per cent or more of those who want basic telephone service now have it, the bill insert covers practically the company's full audience.

Each monthly issue puts into the hands of this interested group, 49 column inches of news and pictures, Mr. Jones points out, which represents a substantial amount of advertising promotion, directed to what should be a receptive audience. This it does at a mechanical production cost of only about one-half cent per copy.

Peninsular's opinion of the *Sun Dial* as a public relations medium is indicated by the fact that the company promotes it in other media, using occasional newspaper ads, radio and TV spots to remind customers to read it regularly. When, some years ago, questionnaires were sent to 20,000 subscribers, 90 per cent of those who replied said they read the *Sun Dial* regularly; only 5 per cent said they do not read it at all.

W. A. Carpenter Retires As Head of N. C. Independent

W. A. Carpenter, general manager of the Hickory (N. C.) Telephone Co., retired Feb. 15 after almost 27 years of service with the company.

G. Norman Hutton, president, took over as temporary manager until the company formally merged with Central Telephone Co. on Feb. 20. Following the merger, the Hickory division of Central Telephone will be under the management of Toral Duckett of Lincoln, Neb., vice president of Central.

Order Appreciated

"Order and system are nobler things than power."—RUSKIN.

no off-hook complaints

no hard-to-see dials

no installation problems

KISS YOUR WALL-'PHONE WORRIES GOO

no ringing complaints

no broken hooks

...ODBYE!

Type 90 Wall Monophones
are available in
eight beautiful colors.

...with Automatic's new Type 90 Wall Monophone

Mister...here's the most practical wall telephone you've ever seen!

No more "off-hook" complaints with this sleek new Type 90. The cradle really wraps itself around the handset. You'll find it's next to impossible to brush, knock or drag the handset off.

The sensible dial angle makes the numbers easier to read, whether you're sitting or standing.

You can install Type 90 in a jiffy. Loosen one screw, the cover's off, and you fasten it to the wall. You don't even have to take the handset off the cradle.

Don't worry about broken hooks, either. The cradle is a sturdy die-casting, the hookswitch lever is inside a die-cast protective tube.

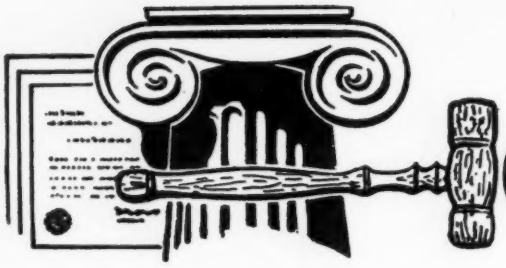
Ringing, as with our Type 80 Monophone, is strong and clear. Space is left between the baseplate and the wall to eliminate drumming.

Write today for Circular 1870 which tells all about this great new wall telephone.

Address: *Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7. Or call HAymarket 1-4300.*

AUTOMATIC ELECTRIC

ORIGINATORS OF THE DIAL TELEPHONE



Courts and Commissions

N. Y. Company Gains Raise To Cover Tax-Wage Rise

The New York Public Service Commission on Feb. 21 reported it had accepted a tariff amendment filed by Oneida County Rural Telephone Co. designed to increase rates by an estimated $7,600 annually, effective Mar. 1.

The company serves about 1,200 customers through automatic exchanges located at Holland Patent and Westernville. The 900 subscribers served by the Holland Patent exchange also have toll-free service to the 700 telephones served by the Barneveld exchange of New York Telephone Co.

In filing its new tariff, the company said additional revenues were needed to offset major increases in taxes and wages if it were to continue adequate service to its subscribers. In support of this contention, the company reported that its local property assessments had been increased by about 67 per cent last year, resulting in a boost of almost $3,000 in operating taxes. In the aggregate, it is estimated that the company's operating expenses for the next 12 months will exceed 1956 costs by about $8,000 or slightly more than the additional revenue to be produced by the new rates.

Sales OKd in Colorado To Eliminate Competition

Mountain States Telephone & Telegraph Co. on Feb. 4 was authorized by the Colorado Public Utilities Commission to discontinue furnishing service in certain areas in competition with the Delta Cooperative Telephone Co., Paonia.

To effect discontinuance of competition in the areas served by both, the commission approved the exchange of certain of their properties.

The commission observed that the Mountain States company does not inter-connect with the Delta company and, hence, Delta subscribers are unable to call customers of the Mountain States company unless they subscribe to the service of both companies. Also, the Delta co-op subscribers had no long distance service.

To eliminate duplicate service and provide full inter-connection of facilities, an agreement was reached—and approved by the commission—in which Mountain States T&T will buy all of the Delta company's outside plant located within the Mountain States company's Delta exchange area, as revised.

The agreement also provides that the Delta company will purchase Mountain States' exchanges at Cedaredge and Paonia. It further provides that the Delta co-op will buy some of Mountain States T&T's exchange outside plant in the Delta exchange area, which will then be served from the Delta company's Eckert exchange.

The agreement also includes an option to the Delta company to purchase Mountain States company's toll stations at Crawford, Hotchkiss, Lazear and Maher. This option was exercised by the Delta co-op in November 1956.

Florida Company Registers 4,000 Shares Preferred

Winter Park (Fla.) Telephone Co. put 4,000 shares of $100 par cumulative preferred stock and 40,000 shares of $10 par common stock into registration with the Securities & Exchange Commission, it was reported on Feb. 18.

The Florida company said it will offer the securities publicly in units consisting of 10 shares of common and one share of preferred.

Security Associates, Inc., Bache & Co., First Florida Investors, Inc., and Grimm & Co. were named underwriters. Proceeds would be used primarily for expansion.

Independent Asks Financing

The New York Public Service Commission on Mar. 1 was to hear the petition of the Big Eddy Telephone Co. for permission to issue 6,000 shares of common and 1,700 shares of preferred stock.

Asks to Cease Operation

The Kansas Corporation Commission on Mar. 12 is to hear the application of the Fairview Telephone Co. for permission to cease operating.

Ill. Bell Asks Rate Raise on Radio-Telephone Service

Illinois Bell Telephone Co. on Feb. 13 asked the Illinois Commerce Commission to increase rates for its mobile radio-telephone exchange service.

The company said present rates for such service were set 10 years ago and do not cover costs. Increases sought are $10 for dispatch service, and $5.00 for signaling service to cars, trucks and other vehicles.

Would OK City Buying Government-Owned System

Legislation (HB521) which would authorize the city of Richland, Wash., to purchase the telephone system built by the federal government in that area was introduced in the state House of Representatives on Feb. 14, the *Associated Press* reported.

The bill would also authorize the city to lease or operate the telephone system under any terms agreed upon with the federal authorities when authorized to do so by the United States government.

OK $15,000,000 Stock Sale For General of California

General Telephone Co. of California, Santa Monica, on Feb. 21 was reported as having received authorization from the California Public Utilities Commission to sell 750,000 common shares (15 million dollars), to its parent concern, General Telephone Corp., by June 30 (TELEPHONY, Feb. 2, p. 31).

Proceeds from the sale would help finance the subsidiary's 72-million-dollar 1957 construction program.

Approves N. D. Transfers

An application asking that West River Mutual Aid Telephone Corp., Hazen, be authorized to construct and operate facilities in areas now served by the McLean County Mutual Telephone Co., and East Farmers Telephone Co., Turtle Lake, was granted recently by North Dakota Public Service Commission.

Report Agreement in Strike Against Ohio Consolidated

Negotiators in the seven-month strike by the Communications Workers of America against the Ohio Consolidated Telephone Co., Portsmouth, O., announced on Feb. 24 that agreement on a new contract had been reached (TELEPHONY, Feb. 16, p. 52).

Although agreement was subject to a ratification vote at union meetings on Feb. 26, a company spokesman said the vote is regarded as but a formality.

Agreement was announced a few minutes in advance of a bristling statement by Gov. C. William O'Neill threatening to use the Ohio national guard to provide protection to persons and property required for restoration of telephone service in Portsmouth.

The governor's statement took cognizance of the apparent settlement, but said that immediate restoration of service is essential. He said he had invited the mayor, city manager, and police chief of Portsmouth, city officials of New Boston, and the sheriff, prosecuting attorney, and common pleas judge of Scioto County to meet with him in Columbus on Feb. 25.

Telephone service in Scioto County had been blacked out since the night of Feb. 22 by the slashing of telephone cables, it was reported.

Terms of the new contract agreed upon by negotiators were kept secret. A spokesman for the negotiating group said there would be no public disclosure until all striking locals voted on Feb. 26. A contract was scheduled to be signed formally on Feb. 27.

The agreement came at the end of a 25-hour negotiating session in which federal mediators took part.

It was reported that one of the issues blocking settlement had been union insistence on retention of closed shop provisions of a previous contract, whereas the company demanded modification giving new employes an option in regard to joining the union. Other issues were job classifications and arbitration provisions.

The blackout in Scioto County was the third for that community since the strike began last July 15. All were due to violence, including cable slashings, clubbings, rock throwing, and gunfire. One of the service blackouts lasted two months.

Although frequent appeals for national guard protection were made, Gov. O'Neill's statement on Feb. 24 was the first in which a threat to use the guard was made by a governor. Frank J. Lausche, who was governor until he resigned on Jan. 3 to enter the U. S. Senate, repeatedly refused to call upon the guard.

O'Neill, who on Feb. 23 sent a guard signal corps unit to Portsmouth to establish communications between his office and the stricken area, said in his statement that there will have to be "maintenance and reëstablishment of law and order" before telephone service can be restored.

N. C. Company Officials Take Executive Course

Four vice presidents and the auditor of the Carolina Telephone & Telegraph Co., Tarboro, N. C., are taking a weekly executives course designed to acquaint them further with all operations of the business.

Each week they file into the director's room and act as though they were president of the company. Armed with pencils, notebooks and questions, they delve into every phase of the business with Dr. E. R. Browning, director of the Department of Business at East Carolina College, Greenville, N. C., sitting at the head of the table and acting as moderator.

The course runs five months with a total of 16 sessions of two and three hours each, corresponding to a full three-hour semester college course. Taking it are J. K. Avent, J. F. Havens and H. D. Holderness, vice presidents, and R. A. Nelson, auditor.

Sitting in the role of observer is President L. W. Hill.

Dr. Browning's role is that of educational counselor for the Southern Institute of Management and the American Institute of Management. He is one of 15 southern college and university educators who attended summer seminars on the course last year at the Princeton, N. J., Administrative Staff College, maintained jointly by the SIM and AIM. He and the other educators were appointed educational counselors for the two foundations following the seminars and are equipped with background and experience to conduct "The Executive Course."

"The company executive taking the course, no matter what his job is, obtains indirectly a 'liberal education'," says Dr. Browning. "He receives this in the meaning of words, phrases and technical terminology, ratios, accounting procedures, bonds and debentures and such. At the same time, he also learns much about all departmental operations of his company."

Object of the course is to strengthen the executive team of the company by delving into all of the company's operations, raising questions and getting answers.

Man Wanted!

WANTED: A MAN for hard work and rapid promotion; a man who can find things to be done without the help of a manager and three assistants.

A man who gets to work on time in the morning and does not imperil the lives of others in an attempt to be first out of the office at night.

A man who listens carefully when he is spoken to and asks only enough questions to ensure the accurate carrying out of instructions.

A man who moves quickly and makes as little noise as possible about it.

A man who looks you straight in the eye and tells the truth every time.

A man who does not pity himself for having to work. A man who is neat in appearance.

A man who does not sulk for an hour's overtime in emergencies.

A man who is cheerful, courteous to everyone, and determined to make good.

This man is wanted everywhere. Age or lack of experience does not count. There isn't any limit, except his own ambition, to the number or size of the jobs he can get. He is wanted in every business.—*Industrial Management Bulletin.*

General of the Northwest Appoints Two Executives

Marvin L. Myrick has been elected vice president of General Telephone Co. of the Northwest by its board of directors, and Robert F. Williams was named secretary of the company, according to an announcement on Feb. 15 by W. R. Jarmon, president.

Mr. Myrick has held the office of secretary and treasurer for General of the Northwest since August 1951, and his promotion to the vice presidency became effective Feb. 15. He will also continue in the capacity of treasurer and industrial relations director of the company.

A graduate of Montana State University and the Harvard Graduate School of Business Administration, Mr. Myrick became affiliated with General Telephone Co. of the Northwest in April 1948, as a junior cost studies engineer. He was named administrative assistant to the vice president, and general superintendent in 1950. Since

(Please turn to page 38)

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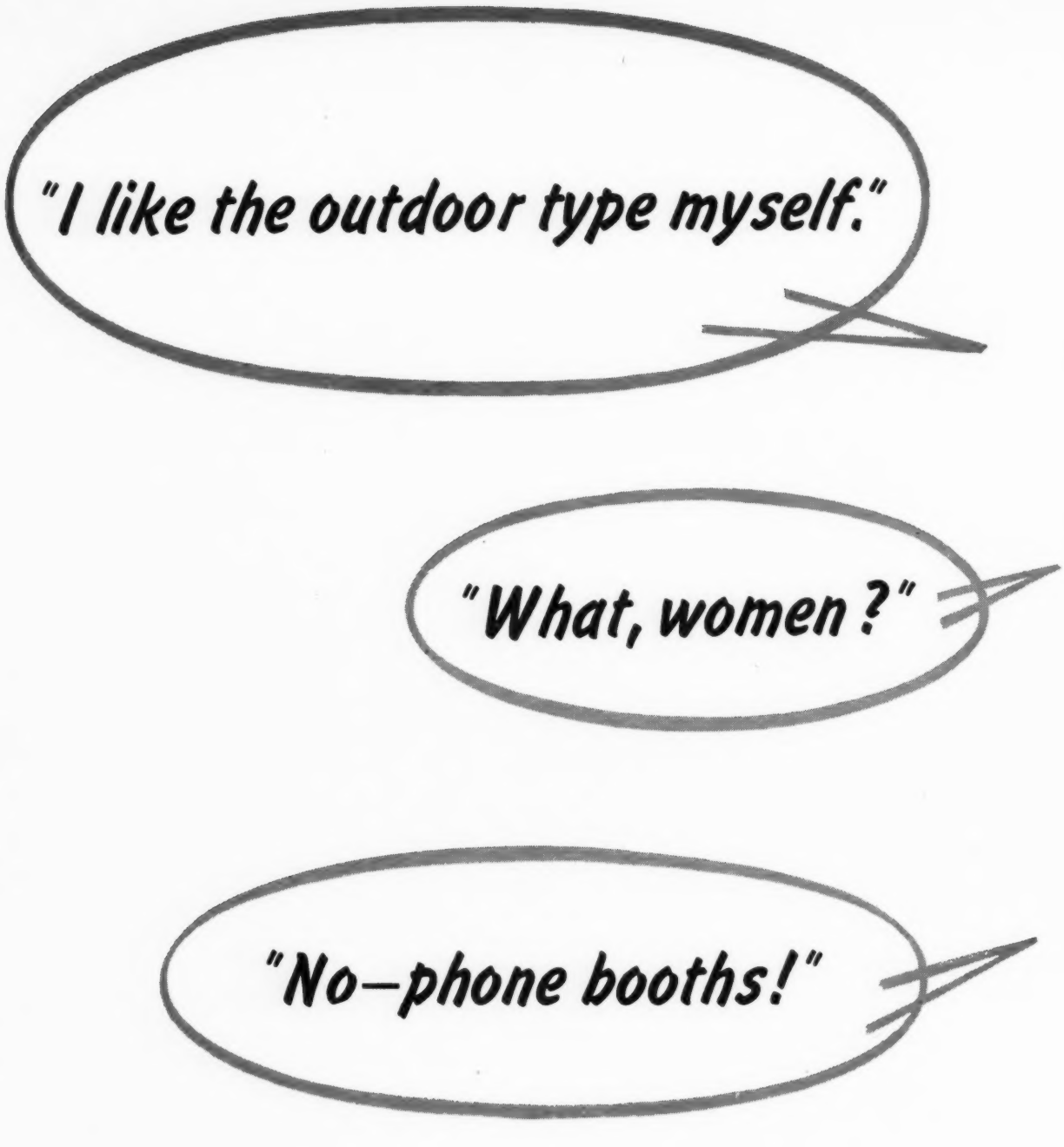

You'll find the rest of this casual conversation in a current advertisement of the Bell System. These two gentlemen are reminding millions of national magazine readers to think of public telephones the next time something comes up when they're away from home or office. . . . We'd like people to think of public telephones as the counterparts of their telephones at home—just as useful, just as handy. By doing this we hope to enhance the value of telephones everywhere.

Bell Telephone System

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joining the organization he attended the public utility executive course of the University of Michigan, Ann Arbor, and a personnel course at Gonzaga University, Spokane, Wash.

Mr. Williams, a native of Colville, Wash., became affiliated with the Federal Land Bank of Spokane in 1932, and from 1936 to 1948 operated a Spokane company bearing his name. He also served on the War Production Board in Spokane for several years during World War II.

Mr. Williams entered into a partnership in the city from 1948 until 1951 when he sold his interest and moved to Pendleton, Ind., as commercial manager and part owner of the Pendleton Telephone Co. He became secretary-treasurer in addition to his commercial duties of that company in 1954. In 1956 he sold the company to General Telephone Co. of Indiana, Inc., and in July 1956 he transferred to General Telephone Co. of the Northwest in Spokane as methods and routines supervisor.

Report Individual's Share Of Debt Is Down to $1,909

In an effort to spotlight the need for reducing the cost of government, the Tax Foundation, Inc., reports the following facts:

"You are $24 less in debt than you were last year.

"So says the government, anyway. Seems our population has grown so fast in the past year that the amount each of us "owes" on the total debt of federal, state and local government is now $1,909. In fiscal 1955, it was $1,933.

"But there is cold comfort in that $24 per capita reduction. Especially when you figure that the owings of all government are at an all-time high. At the end of fiscal 1956 (last June 30), they stood at 321 billion dollars, up 3 billion dollars in a single year's time.

"Up at the top—or bottom, if you prefer—was the federal government, owing 273 billion dollars. Next, the local governments owed 35 billion dollars. And last, the states, which collectively owed 13 billion dollars.

"As recently as 1946, the average citizen owed only $97 on local government debt. By 1955, per capita 'owing' had risen to $201. And there's every prospect that final 1956 figures will show the per capita share of local debt to be higher. As of fiscal 1946, the average citizen 'owed' only $17 on state debt. As of fiscal 1955's end, this figure was up to $69. Here again, indications are that by the time final figures are in, the per capita amount owed on state debt will increase.

"Payments per capita for interest on the federal debt are expected to reach a record high, too. The figure is estimated to be $41.87 for fiscal 1957 as against $41.34 in fiscal 1956. Back in fiscal 1913—when debt interest payments were 23 million dollars (as against 1957's anticipated 7 billion dollars)—the per capita figure was 24 cents.

"By and large, the over-all debt total can be attributed to one simple fact—all levels of government have been spending and contracting to spend more than they collected in taxes.

"More careful thought—followed by a conscious care for how the public money is spent could reduce this staggering debt total, and perhaps put many times $24 in the pockets of each of us."

California Company Names F. Cooper District Manager

Floyd M. Cooper has been appointed manager of the Susanville district for Citizens Utilities Co. of California, according to D. H. Steele, general manager. Mr. Cooper will replace A. W. Powell, who was recently transferred to the general offices in Redding.

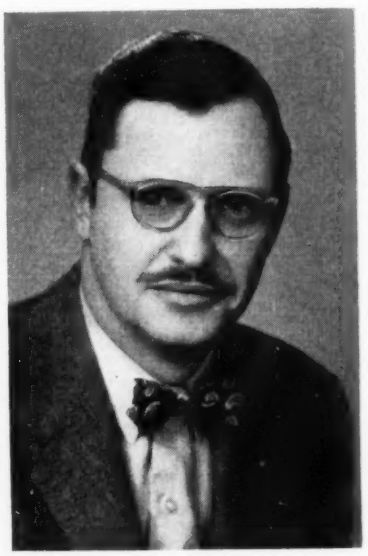
F. M. COOPER

Mr. Cooper, a native of Ohio, joins the company from Cookeville, Tenn., where for the past seven years he has been district manager for the Southern Continental Telephone Co. The company states that Mr. Cooper has a broad background in telephone management and technical experience. He served during World War II with the Signal Corps in England, Africa, Italy, France and Germany.

Prior to his association with the Continental Telephone Co., Mr. Cooper was associated with the Middle States Utilities Co. in Cameron, Mo., and the General Telephone Co. of Ohio at Georgetown.

Carl C. Crane, Inc., Elects J. T. Wright Vice President

Carl C. Crane, Inc., consulting engineers of Madison, Wis., on Feb. 20 announced the election of John T. Wright as vice president to replace Einar A. Nordstedt, one of the firm's founders, who has retired.



J. T. WRIGHT

Mr. Wright, a 1938 graduate electrical engineer of the University of Wisconsin is best known for his activities in the design of rural power distribution systems and telephone systems.

Recent additions to the firm's staff include William J. Zutter, a 1950 graduate civil engineer of the University of Wisconsin, who was previously with the Wisconsin State Aeronautics Commission as airport engineer.

J. M. Wynn of Athens, Tenn., joined the staff from the Southern Bell Telephone & Telegraph Co. where he had 28 years experience in central office work.

Turkish Subscribers Double

The number of telephone subscribers in Turkey has more than doubled in the last five years, according to latest statistics released by the Turkish Information Office. At the end of last year 139,155 telephone subscribers had been recorded, compared with 60,407 in 1951.

View of Good and Evil

"Stand with anybody that stands right. Stand with him while he is right, and part with him when he goes wrong."—ABRAHAM LINCOLN.

He builds goodwill wherever he goes — in a Cleveland Trade Mark - Reg'd UNIFORM

An efficient, courteous, well dressed service representative is your company's best salesman. He builds goodwill wherever he goes.

But the goodwill he builds pays *bigger dividends* when he wears a neat, natty outfit that's easy to identify as *your* company's uniform.

"Cleveland" uniforms—specially made for the telephone industry—are good-looking, comfortable, tough, practical. They carry your company's identification on jacket, shirt and cap.

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Inter-County Telephone & Telegraph Company

Common Stock

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Price $44.125 Per Share

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February 20, 1957

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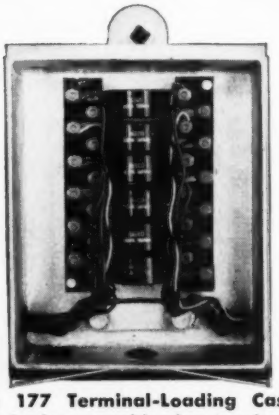
The Cook Hy-Cap Power-cross Protector is designed for use where there is a possibility of contact between communication circuits and power circuits. It also will furnish considerable protection from lightning damage. A product of COOK ELECTRIC COMPANY.



Type 177 Terminal-Loading Case. A cast aluminum combination terminal box and housing for loading coils. For use with the new rural distribution wire for 6, 11 and 16-pair capacity. Available in 8 types. Terminals, available with or without protectors, accommodate loading coils of 88MH or 44MH inductance. COMMUNICATION EQUIPMENT & ENGINEERING CO.

The Time-Tested Steel Strand. A ductile, adherent zinc coating, applied by the famous Crapo Galvanizing Process, provides lasting protection against corrosion in INDIANA STEEL & WIRE COMPANY'S Crapo Steel Strand. Minimum maintenance expense.

Preformed Guy-Grip Dead-Ends for messenger or guy strand. Easily applied by hand. Will hold full rated strength of even extra high strength steel strand. Will not slip. Can be applied to the cut end or coiled end of the strand. Available in galvanized steel, bronze, copperweld and stainless steel. PREFORMED LINE PRODUCTS COMPANY.

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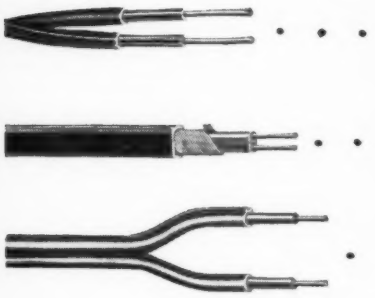
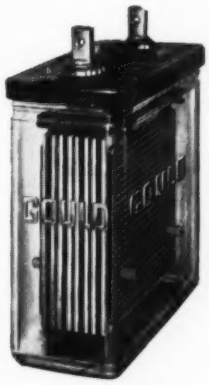
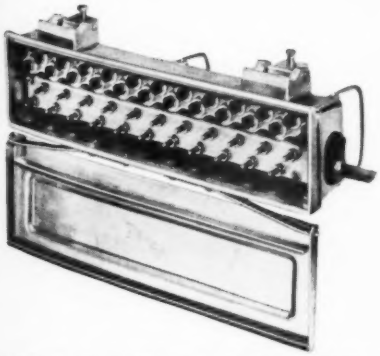


Afraid of Winter? Keep your lines in action—your maintenance costs down, with DIAMOND WIRE & CABLE CO.'s RED-D Drop Wire. Superior adhesion, conductivity, tensile strength. Available in Copperweld and Signal Bronze.



Outstanding Battery Performance is yours when you choose Gould Plante Batteries. Thick, grooved, pure lead positive plates give many years of trouble-free servicel Made by GOULD-NATIONAL BATTERIES, INC., the finest money can buy.



Strand Mounted Terminals—providing new Reliable Fuseless Protector Unit for station or cable protection. Static discharges are dissipated across the elements to ground. With repeated heavy discharges —from fault currents or power surges— carbons are shunted as the attendant heating permanently closes a metallic circuit to ground. Made by RELIABLE ELECTRIC COMPANY.

Kellogg's Standard Outside Plant Handbook now available at special price while quantities last. Reduced to $2.75 a copy, with ten or more copies priced at $2.50 each. Every phase of outside plant telephone pole line construction is covered in book.

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construction and maintenance DIGEST

- **Weather-scoffer**
- **Paper for insulation**
- **Look—no tools!**
- **Power for long life**

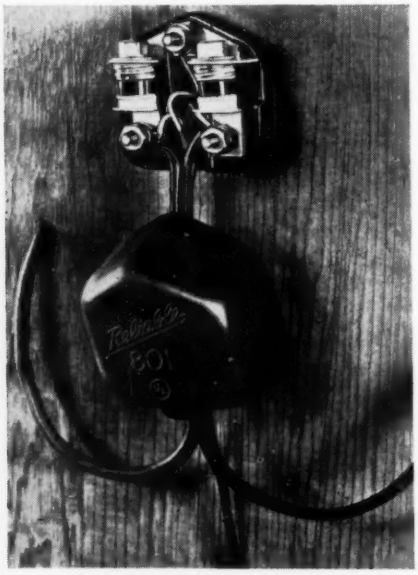
Published regularly to help you get the most out of your materials and supplies dollar

by Ernest P. Riviere, Jr., Inside Sales—San Francisco

The other day I chalked up my 5th year with Stromberg-Carlson—but one of the orders I filled that day made me feel pretty much a youngster in the business: I sent out a battery we promise will serve you for 25 years! That started me thinking about other equipment we supply. Here, the guarantee is a quarter century—there, it's for life, **period.** And always, the guarantee is a double one—ours, and the maker's. It made me realize again how much your orders mean to the science of telephony. It's your supply business that helps us continue our research for ever-better, ever-longer-lived telephone equipment. Thanks a lot!

Long life under all conditions

You get long service life under all kinds of weather conditions with the Series 800 Fuseless Protector, recently developed by Reliable Electric Company.



Easy to install and maintain

This new protector is available with Reliable No. 504 Protector Units (as No. 801) for station protection and with Reliable No. 506 Protector Units (as No. 801A) for cable protection.

The weather-tight neoprene cover has passed the Underwriters Laboratories severe requirements for performance and weathering under temperature extremes. The protector is listed under UL Re-examination Service.

The neoprene cover fits snugly and drops out of the way conveniently when protector is installed or serviced.

Paper-insulated Telephone Cable for unsurpassed performance

Kennecott Telephone Cable is made with conductors of 19, 22, 24 and 26 AWG annealed copper wire.

Each wire is insulated with (one or more wraps) of manila paper, or paper made from clear rope stock with suitable proportions of wood, pulp or cotton rag stock added.

The paper is wound in helical form around the wire. When two papers are used, they are applied in reverse direction.

Dry paper is used because of its excellent electrical and mechanical properties.

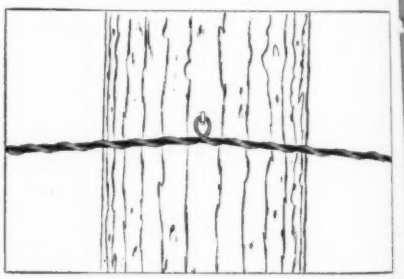
After insulation of the conductors, they are twisted together to form pairs, each wire of a pair being wrapped with paper of a different color for tracing purposes.

The twisted pairs are cabled together in layers, each layer being one pair thick. Alternate layers are cabled in opposite directions. The complete cable core is taped over with paper.

After removal of moisture by heat and vacuum, the cable is then sheathed with lead containing 1% antimony. For further information consult your Stromberg-Carlson representative.

Apply these tangent supports by hand

You can make mid-span supports simply, efficiently and at low cost with Preformed Tangent Supports.



Made of stainless steel, with neoprene coating for protection against corrosion and abrasion.

You need no tools to apply these supports. The job is easily done by hand. To install, simply place loop configuration on the wire and then wrap on the legs.

You eliminate cross-talk by giving line wire 10 longitudinal twists, alternating at every other pole.

Your Stromberg-Carlson representative is ready to supply them to you.

Battery life prolonged by strong plates.

The Exide-Tytex Battery is a flat plate type specially designed to give long life. In addition, it offers the advantages of high capacity in relatively small size. Hence it is preferred in many telephone applications.

One of the most important features of the Exide Tytex Battery is the construction of the positive plate. The exclusive, patented Silvium grid resists corrosion—prolongs battery life. Specially shaped horizontal grid bars lock the active material firmly to the plate while presenting only a minimum of exposed metal to the electrolyte. This also effectively shields the grid against corrosion and at the same time insures that every plate will have a maximum of active material in contact with the electrolyte—for higher capacity. Every fifth horizontal bar is 300% thicker in order to give the plates extra strength.

Molded plastic jars require considerably less space than needed by conventional cells. This makes it possible to put more battery capacity into a given amount of shelf area.

Your Stromberg-Carlson representative can offer prompt delivery on your order.

Did you know . . . that the Stromberg-Carlson general catalog has more than 100 pages of maintenance and construction supplies alone? You can do *all* your business "under one roof" and find the same quality and reliability in every item.

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BOOK REVIEW

"ELECTRONICS IN INDUSTRY," by George M. Chute; 431 pages, illustrated. Price $7.50. This book may be purchased from TELEPHONY.

One of the difficulties in writing on the subject of electronics is selecting the "level" at which to aim. This is so because in any given type of job in this field, men will be found with greatly varying degrees of knowledge on the subject.

To write a book with universal appeal is a problem because if it is too elementary the smarter readers will be bored, while if the level is too high, the people who need the knowledge the most will be the first to get lost.

This book uses an interesting approach which makes it valuable to anyone who must use or service industrial electronic equipment. The approach assumes that the reader has no previous knowledge of tubes, so it starts with some real down-to-earth material about electrons. However, each individual topic has a paragraph number and a bold-face type heading. Hardly a page in the book can be found which does not have one or more sub-heads.

Therefore, just in case you do know how certain kinds of tubes work, you can skip a few pages or paragraphs until the going gets a little thicker.

However, if you are the type that needs the fundamentals but would just as soon leave the high level items for the engineer, you can read along until you come to a paragraph with a star in front of it. This means you can skip it and move on to the next chapter if you don't care for technical details.

For instance, when talking about diodes, the book has paragraphs on tube advantages, why a tube works, electron flow and space charge, but has stars in front of the headings "Electron Emission," "Electron Theory," and "Plate Voltage Characteristic of a Diode."

Thus the book becomes of value to the man who must work with an electronically controlled machine as well as to the plant engineer who must fully understand its operation.

Communication circuits are not covered by the text, but this does not mean it has no advantage in the communications field. Regular radio tubes are mentioned only in the beginning. The book is about such things as thyratrons and ignitrons, but in industrial controls these tubes are made to act as relays, hence are electronic switches.

The operating principles are of the sort that will one day be part of the telephone business.

Actually, thyratrons are now used in battery charging equipment in central offices, but there are probably few telephone men who would not profit by the description of how they work as contained in this book.

Examples

Because this book is aimed at the working personnel in plants where electronic controls exist, each main subject is illustrated with practical examples from industry. These examples appear as the reader progresses through more complicated types of controls.

For instance, after diode and rectifier principles are explained, it is shown that tubes of this sort can be made to act as switches. After simple drawings of diodes, the matter of electronic timing for welding control is shown.

In this system, a thyratron is used to control the ignitron. A radio tube will only pass a few milliamperes. A thyratron will handle several amperes. An ignitron, which uses a pool of mercury for a cathode, can handle several thousand amperes.

Thus, by using tubes wired up in this order, a spot welding circuit can be closed which will pass a large current for a short time. This can be done precisely and quietly with a simple control—all electronic. If done mechanically, it would require a large noisy contactor with its associated maintenance problems.

Study Course

The book was originally written from material used in an evening study course taught in Detroit. The author was applications engineer with General Electric at the time. GE supplied illustrations for the book, so the examples shown are actual industrial controls.

Other chapters in the book cover gradual control of the thyratron by phase-changing methods, light and heat relays, motor controls, closed loop systems and servomechanisms, and the use of transistors.

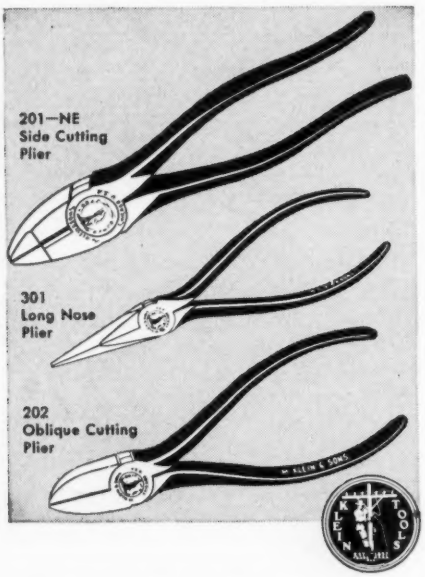
In addition, there are descriptions and explanations of such fascinating things as amplidynes, magnetic amplifiers, selsyns, strain gages, thyrite, and saturable reactors.

While many of these things are not in the communications business in any quantity today, they are approaching rapidly; and many telephone men will enjoy this book for the educational and curiosity value alone.

Those who want to progress further will find use for a long list of movie films about electronics which appears in the back of this book.—**Reviewed by Harold B. McKay.**

XUM

KLEINS



Standard of the Industry for Over a Century

Ask the lineman on the pole . . . the electrician at the switchboard. They will tell you that the pliers they rely on are Kleins—every time.

Kleins have been serving the electrical industry since the first wires were strung and today have the same high quality, the same fine craftsmanship, the same individual inspection and testing that have won them their place for a century as first in pliers.

A wide variety of sizes and styles to meet any need . . . but only one quality—the highest.

ASK YOUR SUPPLIER

Foreign Distributor:
International Standard Electric Corp.
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SEND FOR NEW POCKET TOOL GUIDE

100 years of service to linemen, electricians and industry is back of this new Pocket Tool Guide No. 100. A copy will be sent to you upon request, without obligation.

Mathias Established 1857 KLEIN & Sons Chicago, Ill., U.S.A.
7200 McCORMICK ROAD • CHICAGO 45, ILLINOIS

THE OPERATOR'S CORNER

Concluded from page 24

the girls at their ship at 6:30 with only minutes to spare before they went on a scheduled luau at Queen's Surf. Their ship left on the return voyage for Australia at midnight.

"You would have enjoyed meeting and talking with the two girls, Mayme, for they were a lively pair. I was sorry that as long as they were coming this far, they did not get to see San Francisco or some other West Coast port. Their ship had come here direct from Auckland, New Zealand, but as their pronunciation of 'Auckland' is 'Oakland,' one of us inadvertently remarked that if they had already been to Oakland, how did they miss San Francisco? More laughter.

"We learned a good deal about Australian telephone service, noting that they are inaugurating such modern features as operator dialing of long distance calls. Getting a telephone installed is something more of an ordeal than it is here, however, for all requests for service must be in writing, and they are generally followed by a long wait (usually several months) before the installation is finally made. It also appears that merchandising, routing out new customers and persuading the old ones that they need more service than they have, is something yet to come their way. We were sorry the girls could not stay longer. Aloha!"

And there you have another example of the warmth and friendliness of Hawaiian hospitality which in my opinion, is unexcelled.

We hope Vera and Shirley will visit the mainland on their next visit. It would be a real pleasure to meet them and exchange experiences.

Traffic Questions

(1) How should the Toll Auxiliary Operator quote a rate to an operator?

(2) If the initial period is 4 or 5 minutes, instead of 3, should this information be passed to the operator in quoting a rate?

(3) Should only the rate to the called place be quoted by the Toll Auxiliary Operator if the distant place is listed "Certain subscribers connected with (other place or places)?"

(4) How should the Toll Auxiliary Operator proceed when she receives a request for information as to whether a specific place can be dialed by customers?

(5) How is a rate quoted by the Toll Auxiliary Operator? (On a completed call).

Answers are presented on page 45.

Accident Death Toll Rises To 95,000 in 1956

Killed—95,000.

Injured—9,450,000.

The cost—10.8 billion dollars.

That was the toll exacted from America by accidents in 1956, according to the National Safety Council.

The death toll compares with a total of 93,443 in 1955—an increase of 2 per cent.

Motor vehicle accidents remained the nation's No. 1 accident killer. A 4 per cent increase in traffic deaths was the reason for the higher all-accident death total for 1956.

Home accidents claimed the second largest number of lives, although the 1956 total dropped by 500 to 27,500.

Here is the complete accident story for 1956 in terms of deaths:

	1956	*1955*	*Change*
ALL ACCIDENTS	95,000	94,443	+2%
Motor Vehicle	40,000	38,426	+4%
Home	27,500	28,000	—2%
Work	14,300	14,200	+1%
Public (not motor vehicle)	16,500	16,000	+3%

(Motor vehicle deaths include some which also are shown as work and home deaths. All figures are National Safety Council estimates, except the 1955 all accidents and motor vehicle totals, which are from the National Office of Vital Statistics.)

The estimated economic loss of 10.8 billion dollars from accidents in 1956 covers both fatal and non-fatal accidents and includes wage losses, medical expense and overhead costs of insurance for all accidents, production delays, damage to equipment in work accidents and property damage from traffic accidents and fires.

The nation's 1956 motor vehicle death toll was estimated by the Council at 40,000—up 4 per cent from the total of 38,426 in 1955 and virtually a dead heat with the all-time high of 39,969 established in 1941.

The Council emphasized that the 40,000 estimate cannot be called a new record. Later figures on delayed deaths will revise the estimate, and the total may be greater or less than the estimate of 40,000.

Deaths from work accidents in 1956 totaled 14,300—an increase of 100 from 1955. Total all-industry employment was about 3 per cent more than in

1955, while manufacturing employment alone went up 2 per cent.

Disabling injuries from work accidents numbered approximately 2 million compared with 1,950,000 in 1955. Economic loss from work accidents was about 3.6 billion dollars.

Work accident rates on a national basis are not yet available, but there apparently was little change from 1955. Injuries totaled 50,000 more than in 1955, but a small increase in employment plus no change in average hours worked per week approximately offset the rise in injuries.

Deaths to workers from all accident causes totaled 45,100—14,300 on the job and 30,800 off the job. This is an increase of 100 deaths over 1955. Injuries were about 4,350,000.

Total time lost in 1956—direct and indirect—was 295 million man-days, equivalent to the shut-down of plants with about one million workers for an entire year.

A complete listing of work accident rates by industry will not be available for several months, the Council said. Detailed summaries on all accidents are published each year in the Council's statistical yearbook, "Accident Facts."

Order Evaluated

"Order is heaven's first law."—POPE.

Answers to Questions On Page 44

(1) She will determine and quote the rate in effect at the time the request is received unless a different rate is requested, saying, "(Amount for initial period.)"

(2) Yes. "For 4 (or 5) Minutes" is added in quoting a rate.

(3) Yes.

(4) If the called place is in the first reference list or if she knows whether or not it is authorized to be dialed by customers in the calling office, she will give the answer at once, adding the area code if the called place can be dialed. Information shown with the called place name in the first reference list will indicate that the place can be dialed. In any other case, the Toll Auxiliary Operator will say, "I'll see," and will consult the Operating Rate and Route Guide.

(5) The operator will locate the ticket, rate it if necessary, and quote the information desired.

LOOK TO

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FOR

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in Nationally Known Telephone Supplies

Lindsay's extensive warehousing operation means *immediate* shipment of most supplies . . . and our fast, efficient, *personalized* service guarantees satisfactory handling of every order from placement to delivery.

For reliability both in product and in service . . . "Look to Lindsay" . . . specialists in telephone supplies *only*. —Phone or write for immediate delivery or required data.

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clear
lines
fast with...

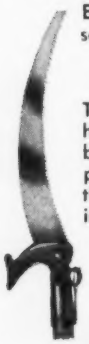
SEYMOUR SMITH
"Telephone" Tree Pruner

Here's the standard, the choice of the utility industry for years. Powerful action to cut cleanly—tough and almost unbreakable—easy to handle. No. 12 Pruner Head has 1½" cutting capacity. The lighter, No. 11, handles up to 1" branches. Both are malleable iron castings with tempered steel cutting blade.

Poles (18 ft. 3 sections) are of selected spruce with positive locking, seamless aluminum, telescoping ferrule joints.

FAST CUTTING PRUNING SAWS

Designed for fast, easy cutting—large, deep teeth, finest Swedish charcoal steel, streamlined, laminated hardwood handles. Every model you need up to chain saw work.



No. 20 POLE SAW HEAD

Tough aluminum head with large hook and outside horn for pushing branches, raising wires, etc. Also paint brush holder with wire clamp that holds brush securely. Fast-cuting 16" blade. Poles available.

FREE: Send for Seymour Smith catalog pages on tools for utilities. Keep them on file for easy reference.

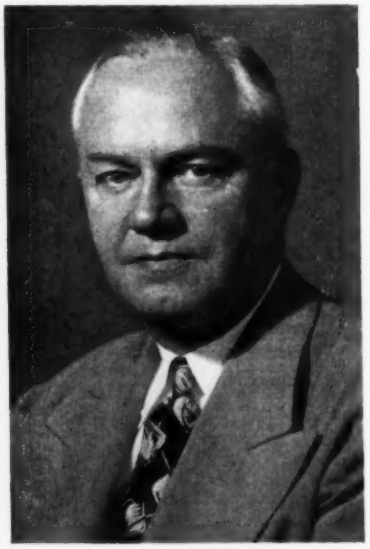
Quality Tools
SEYMOUR SMITH
Since 1850

SEYMOUR SMITH & SON, INC.
4503 Main St., Oakville, Conn.

IT&T Reorganizes Activities Along Functional Lines

First steps in a reorganization of International Telephone & Telegraph Corp.'s domestic research, manufacturing, sales and service activities along functional lines were announced on Feb. 15 by Edmond H. Leavey, president.

A new post of IT&T vice president in charge of marketing has been created and is being filled by Raymond S.



R. S. PERRY

Perry, former president of Federal Telephone & Radio Co., Clifton, N. J., a division of IT&T. He will be responsible for market research and for coordinating the promotion of IT&T

J. E. GINGRICH

products manufactured both in the United States and abroad.

FTR, under its newly elected president, John E. Gingrich, who is also a vice president of IT&T, will continue to produce electronic apparatus and equipment for the Armed Forces and other government departments, as well as various electronic components for the commercial market. It is planned at a later date to group components for commercial use in a separate division.

Responsibility for telephone manufacturing activities carried on at the FTR plant has been assigned to George

G. T. SCHARFFENBERGER

T. Scharffenberger, president of Kellogg Switchboard & Supply Co., IT&T unit in Chicago, thus combining for operational purposes under one management all domestic IT&T manufacturing and sales in that field.

Wire and cable manufacturing activities previously carried on at FTR are being transferred to Royal Electric

ROBERT RIESMAN

Corp., IT&T subsidiary in Pawtucket, R. I., whose president, Robert Riesman, will be responsible for that branch of IT&T activity in the United States.

Certain industrial products of FTR and other IT&T divisions, including instruments and railroad signaling and

J. A. FRABUTT

control equipment, will form the nucleus of a new industrial products division whose president will be Joseph A. Frabutt, former FTR vice president in charge of its Pacific branch.

"These are the first steps," said President Leavey, "in a projected plan of reorganizing IT&T's research, manufacturing, sales and service activities in the United States so as to establish one, clean-cut, profit responsibility for each of our principal product lines and its related market area, and to eliminate any overlapping of sales and production efforts that may now exist.

"The reorganization will go forward by carefully planned stages in order to avoid interference with production schedules. Technical coordination of each new step will be carefully investigated and weighed before action is taken. When complete, the new organizational structure will put IT&T in a better position to realize its production and profit potentials."

GRATITUDE

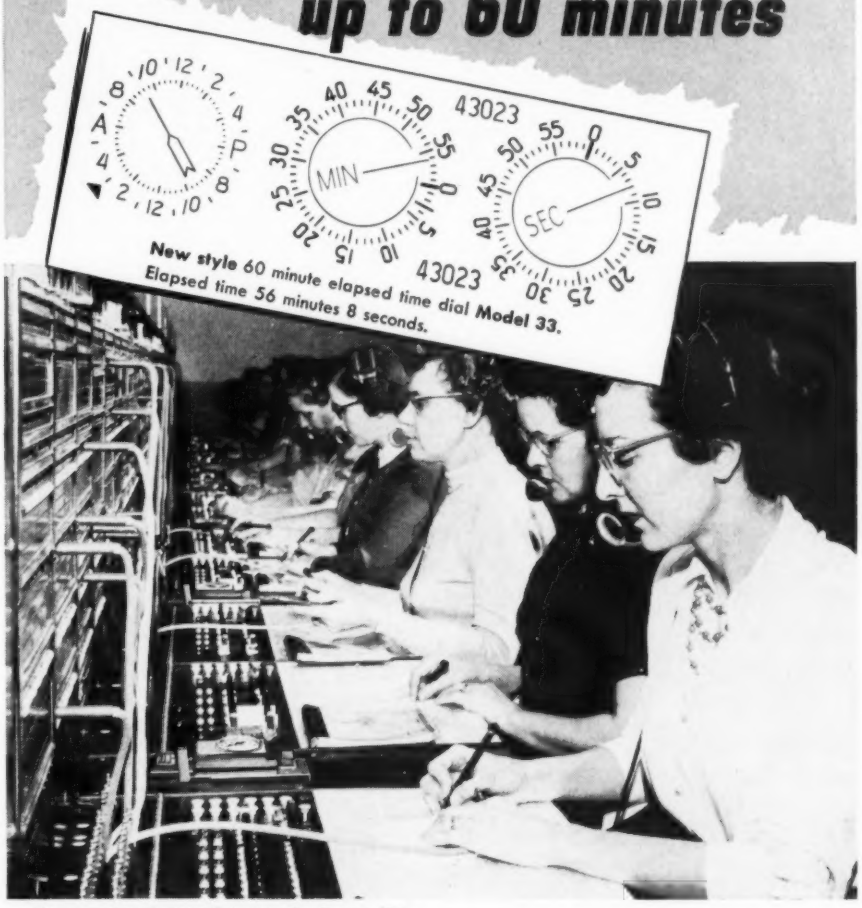
By Joseph T. Kilmer
Panora Western Mutual Tel. Co.

Upon an icy pole
The village lineman aches,
A lonely chilblained soul
Bedeviled by the breaks
In ice-torn copper thread.
He mends the tenuous path
On which warm voices sped
Till stopped by blizzard's wrath.

We're grateful—yes indeed!—
To Linemen, brave and tough,
Commending frost-nipped speed—
"It took you long enough!"

CALCULAGRAPH

Now Automatically gives you accurate Toll Call Records— up to 60 minutes



New style 60 minute elapsed time dial Model 33. Elapsed time 56 minutes 8 seconds.

Photo courtesy of Union Telephone Co., Owosso, Mich.

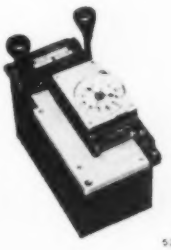
Now, Calculagraph, the modern dependable computer, automatically figures and prints toll calls up to 60 minutes —no need to add 30 minutes on long conversations.

Thus, Calculagraph adds one more feature to reduce human errors by busy operators and increases the volume of calls handled per operator. Assures you of all revenue due on every call.

For accurate toll call records, for automatic computation of elapsed time, for more efficient operation, install the new 60-minute elapsed time Calculagraph on your switchboard.

Information on this new Calculagraph is yours upon request.

Write today for illustrated brochure to Dept. T.



CALCULAGRAPH Company
HARRISON, N. J.

DEPENDABLE ELAPSED TIME COMPUTERS SINCE 1892

XUM

KENTUCKY DIVISION OF SOUTHERN BELL INSTALLS NEW TYPE PURGING SYSTEM

Faced with the need for exceptionally dry air in local and toll cables to eliminate interruption of service due to moisture, Kentucky Division of Southern Bell Telephone Company, Louisville, Ky., has installed Industrol Automatic Purging Systems. These units are . . .

Flexible, Compact,
Maintenance Free, Efficient.

Industrol Dryers have been developed specifically for use in remote radar and for other large and small transmission line installations.

Your Industrol representative can answer your questions regarding specialized dryers developed to handle your own drying requirements. Contact your local Industrol Salesman or write directly to Department 321, Industrol Corporation, Roselle Park, New Jersey.

INDUSTROL

ROSELLE PARK, NEW JERSEY

Autelco Mediterranea Makes Executive Changes in Italy

D. C. Galassi, formerly managing director, has been elected chairman of the board of directors, and Adm. Raffaele de Courten has been elected vice-chairman of the board and chairman of the executive committee of Autelco Mediterrenea, S.A.T.A.P., Milan, Italy.

D. C. GALASSI

In other actions taken by the board, Egidio Maneschi was elected managing director, and Ugo Piperno was appointed general manager.

Autelco Mediterranea, S.A.T.A.P., is the Italian manufacturing affiliate of Automatic Electric Co., Chicago.

EGIDIO MANESCHI

Mr. Galassi has been associated with the Automatic Electric group for over 30 years, and has been managing director of Autelco Mediterranea since 1937. Under his guidance, the organization has grown from a small assembly operation with less than 100 employes to one of the leading telephone manufacturing companies in Italy, with approximately 1000 employes. In 1953 Mr. Galassi was awarded the honor of "Commendatore al Merito della Repubblica" by the President of Italy for his contributions to the Italian telephone industry.

UGO PIPERNO

Admiral de Courten, who has served as Chief of Staff of the Italian Navy, and later as Secretary for the Navy, has had a distinguished career in industry. He is chairman of Lloyd Triestino, one of the largest steamship companies in Italy, and has been chairman of the Taranto Shipyards and of the Adriatica Line. In 1951, Admiral de Courten was named governor of the Italian district of Rotary International.

Mr. Maneschi joined Autelco Mediterranea in 1938 as works manager. He was appointed general manager in 1945, and was elected to the Autelco board in 1952.

Mr. Piperno has been with Autelco for 23 years, and has been commercial manager and assistant general manager.

The End Result

"From the standpoint of the government, the private enterprise system is a source of revenue out of which public services are financed. The more government competes with private enterprise by producing goods and services itself, the less will private enterprise produce out of which taxes can be paid to support the government. The smaller the sector of private enterprise that can be taxed, the greater must be the amount of taxes imposed upon the enterprises that remain and the individuals connected with them. The higher the burden of taxes on the individual, the less is his liberty to spend his income as he desires, or to conduct his affairs as he desires."—HAROLD W. METZ, *formerly senior staff member, The Brookings Institution.*

Cook Electric Co. Names Manager of Wirecom

Michael F. Tupica has been promoted to manager of the Wirecom division of Cook Electric Co., it has been announced by Walter C. Hasselhorn, president. Mr. Tupica was formerly a sales engineer for Cook Electric's midwestern sales division.

M. F. TUPICA

Before joining the company in 1953, he was sales engineer for Unity Furniture Mfg. Co. for seven years. Earlier Mr. Tupica served with Courtland Mfg. Co. in a similar capacity. From 1939 to 1941, he was lay-out and welding department supervisor for J. W. Allen Co.

Wirecom division, one of Cook Electric Co.'s family of divisions and wholly-owned subsidiaries, manufactures wire communication equipment for the Independent telephone industry, the U. S. Army Signal Corps, the U. S. Air Force, and for export.

TESTING LABORATORIES
"I wrote a real technical article about transistors for our telephone magazine, and the editor said it had no strong emotional conflict, plot characterization, or surprise ending!"

NOW
A TELEPHONE SERVICE BODY . . .
at LOWER COST!
WITH EVERY QUALITY FEATURE FOR CONVENIENCE AND LONG SERVICE LIFE
It's true; Stahl TMI-76 Telephone Service Bodies have the extra costs engineered OUT. Here is a body that has all the space you want, a body that is reinforced at EVERY point of strain, precision welded of auto body steel, yet COSTS YOU LESS!
Available with Ladder Racks and Rear Bumpers, in prime finish or painted to your order.
MADE BY STAHL . . . BUILDER OF QUALITY SERVICE BODIES . . . mounted on your chassis at our plant, or crated and shipped to you at new low shipping cost.
Write for descriptive literature and complete specifications.
TMI-76 . . . FIRST TOP QUALITY TELEPHONE SERVICE BODY AT A PRICE!
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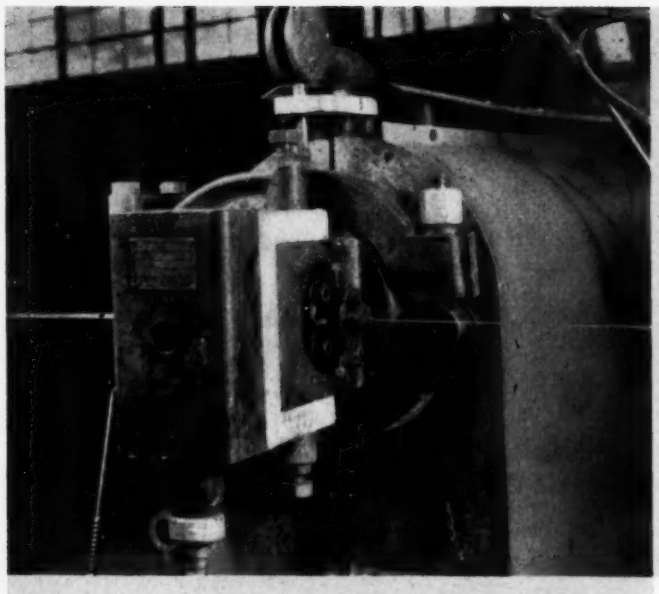
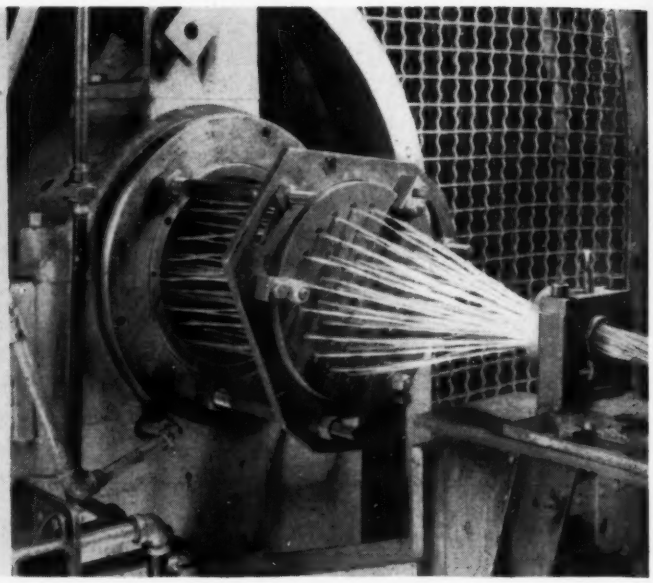
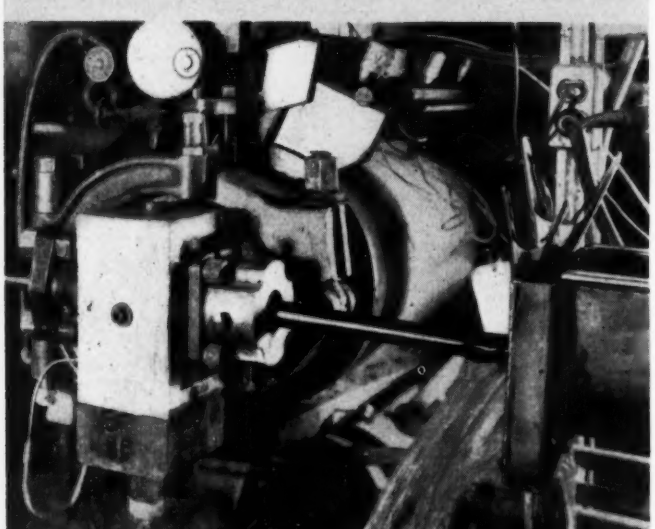






Whitney Blake extrudes polyethylene to form continuous insulation about 1/64 of an inch thick around a single conductor (top left photo). Pairs of these wires are twisted together and fed through a die that twists 50 wire pairs together to make a cable core (top right photo). A polyethylene tape and then a shielding layer of aluminum is wrapped around the core before the outer jacket of black polyethylene is extruded in place (bottom left photo).

Use of Polyethylene In Telephone Cable Increases

The past five years have seen growing evidence of an increasing use by the telephone industry of polyethylene for both insulation and jacketing of outdoor cable. The action reflects a re-evaluation of polyethylene by cable engineers. Once valued solely for its excellent electrical properties by cable designers, polyethylene has won increasing acceptance as a tough, permanently flexible sheath for outside wire and cable, The Bakelite Co., division of Union Carbide & Carbon Corp., stated in a recent release.

Until 1951, most of the multi-conductor telephone cable was made with paper insulation and lead sheath surrounding the wires. At about that time, however, indications of a slowly developing shortage in the world's lead supply forced a search for new materials to maintain this vital communications service.

Bakelite points out that cable manufacturers, such as Whitney Blake Co. of New Haven, Conn., began to try out various plastic materials for the job. One of the most promising was polyethylene, which was first introduced commercially in this country by the Bakelite company. Cable producers were one of the first to use this new material during World War II when it was a much needed insulation for military field wire, radar equipment and submarine cable.

In the new era of television, electronic brains, coaxial cables, and transatlantic telephone cables that followed, polyethylene rapidly established a solid reputation as an excellent electrical insulating material. The chronic shortage of polyethylene in the early postwar years, however, held back its development for telephone industry use for a time. But, it never lost interest in the new material, since polyethylene proved to be a good dielectric material and offered an unusual combination of electrical, mechanical and chemical properties.

One of the outstanding properties of polyethylene is its remarkable resistance to moisture and water vapor, Bakelite states. Polyethylene does not lose its effectiveness as electrical insulation once it is exposed to water. This means that service will continue if the jacket of a polyethylene insulated cable is ruptured during a storm. It also means that repairs can be made on a routine rather than an emergency basis.

This ability to keep on operating in the presence of moisture minimizes expensive terminal equipment on exchange area cable distribution. Low cost terminals that are weathertight but not moistureproof can be used with polyethylene insulated cable. These terminals also permit easy access to the cable core for rearranging or adding to wire pair terminations. With an average count of 25 terminals per mile of distribution cable, the possible savings in labor and terminal cost quickly build up to an impressive amount, according to the Bakelite company.

In addition, points out Bakelite, polyethylene cable is light and easy to handle. The low weight has the result of a reduction in freight charges. Since cable insulated with polyethylene is low in weight, the necessary equipment for stringing aerial lines can be reduced commensurately in strength, weight

and cost. Smaller poles, or even fewer of them are needed. Hangers and messengers can also be made lighter.

Cable splicing is another area in which polyethylene provides an advantage; proper splicing methods can easily be learned by non-skilled workers after a short training period, it is pointed out.

Initially polyethylene cable was available with only a limited number of wire pairs. For a while, it was thought that 51 pairs might be the limit. But through improvements in fabrication, Whitney Blake has been able to produce cable with 303 pairs. The new multi-pair sizes appreciably widen the market for polyethylene cable, Bakelite states.

Accelerated aging test methods have been developed which affect polyethylene in manner similar to sunlight. These tests, when extended and supplemented, indicate that suitably prepared polyethylene jacket compounds should perform satisfactorily on aerial cable for upwards of 20 or 25 years, according to Bakelite. Such polyethylene compositions are not subject to so-called "environmental cracking" when subjected to torsional stress as cable sheath. No other thermoplastic material has given as good assurance of such aerial cable sheath life expectancy as has polyethylene, it is asserted. Bakelite polyethylene is used to insulate the conductors in Whitney Blake's new exchange area Telecable. The wall thickness of this insulation is about 1/64 of an inch. This provides mutual capacitance values, which determine the clarity of the transmitted message, well within the limits to which paper-insulated cables of equal size are manufactured.

To minimize the possibility of crosstalk or noise, Telecable twists the wires in pairs. The length of twist is varied between adjacent pairs in a layer and between adjacent layers. A spiral layer of Bakelite polyethylene is wrapped around this core of wire pairs to act as a binder and cushion for the metallic shielding tape that goes over it. An outer sheath or jacket of black, weather-resisting polyethylene completes the cable. This tough and flexible jacket withstands sunlight, atmospheric temperatures and stresses to be expected during installation, according to Bakelite. When tested for ability to bend at low temperatures in accordance with the same specification, no cracks will occur at temperatures as low as —60° C.

Further improvements in the manufacture of polyethylene are expected to broaden its application in the telephone industry, Bakelite predicts.

TAKE A BIG STEP TOWARD **SAFETY** WITH **DUO-SAFETY LADDERS**

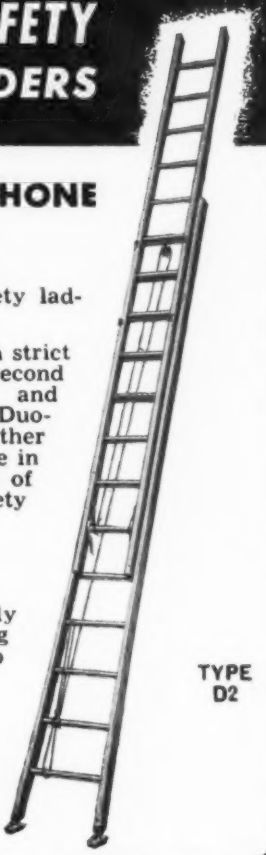
... CUSTOM DESIGNED FOR TELEPHONE MAINTENANCE WORK!

Here's one fine example of the many Duo-Safety ladders ideal for telephone maintenance work.

Type D — a truly great extension ladder built in strict accordance with safety regulations. Rungs are second growth hickory, reinforced with steel rods and equipped with special automatic locks and Duo-Safety's famous Safety Shoes. Made with either straight or parallel side rails, Type D is available in one, two or three sections — in a large variety of sizes. Write for free catalog on all Duo-Safety ladders.

IMMEDIATE DELIVERIES!

Duo-Safety ladders will be shipped immediately upon receipt of order! A planned stock-piling program assures really fast action — there's no delay the Duo-Safety way!



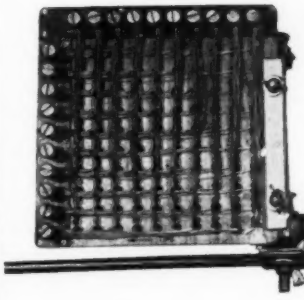
TYPE D2

For Information, Contact Your Supply House, or

DUO-SAFETY LADDER CORP.
809 Ninth Street • Oshkosh, Wisconsin

CONTINUING IMPROVEMENTS IN THE
Murphy **"ONE-MAN" Cable Tester**

MODEL TTB



ONE MAN WORKING ALONE

Can Now Identify Non-Working Cable Pairs 3 times faster than 2 men working together.

DISTANCE:
2 feet to 40 miles

MODEL CMUW

The Combination Tag-and-Terminating Board, showing cable pairs properly connected. Tips — Horizontally, RINGS—Vertically.

The NEW MODEL CMUW
The new weatherproof gasket sealed case is now a part of every MODEL C shipped.

WE SELL DIRECT ONLY TO DOMESTIC CUSTOMERS
Foreign Customers See Your Export Agent or Write Us

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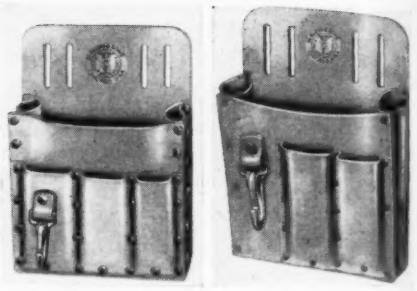
News on New Products



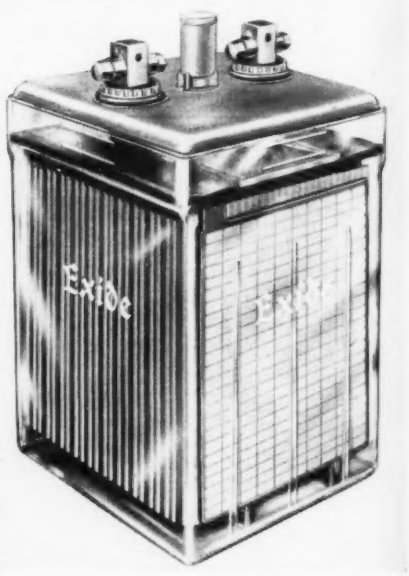
NEW UTILITY POCKETS—Mathias Klein & Sons has introduced two new pockets for linemen's and electricians' use. Both are made of high-quality harness leather with the back slotted to attach to belt. Both have a large utility pouch for general use, two pockets for screwdrivers and handy knife snap.

The 5126 also has two pockets for pliers and the 5127 has three pockets for pliers. The size of the 5126 pocket is 6½ inches by 8½ inches wide and the 5127 is 7 inches by 10 inches wide. Request NP618.

•

PLASTIC-JAR BATTERY—A new flat-plate-type battery for the telephone industry has been developed and made available by Exide Industrial Division of The Electric Storage Battery Co.

Positive plates of the new EWA battery are a blend of lead-antimony and Silvium, Exide's patented alloy of lead, silver and other metals. The jar and cover are made of light-weight, heat resistant, shock-absorbent polystyrene.



By adding Silvium to lead-antimony for the positive plates, Exide assures long battery life and protection against corrosive damage caused by overcharging, according to the company, which states that Silvium has the highest resistance to electrolytic corrosion of any battery grid alloy yet developed.

Leak-proof construction is accomplished by permanently bonding the plastic cover to the jar. Seal nuts and gaskets prevent seepage around the heavy, square terminal posts.

EWA elements are suspended from ledges molded within the jar walls. Molded ribs at the bottom of the jar

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Please have the manufacturer send me without obligation the literature indicated by the following numbers:

NP618 ..... : NP619 ..... : NP620 ..... : NP621 ..... :

NP622 ..... : NP623 ..... : NP624 ..... : NP625 ..... .

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just press the button!

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Engineering Representatives in Principal Cities

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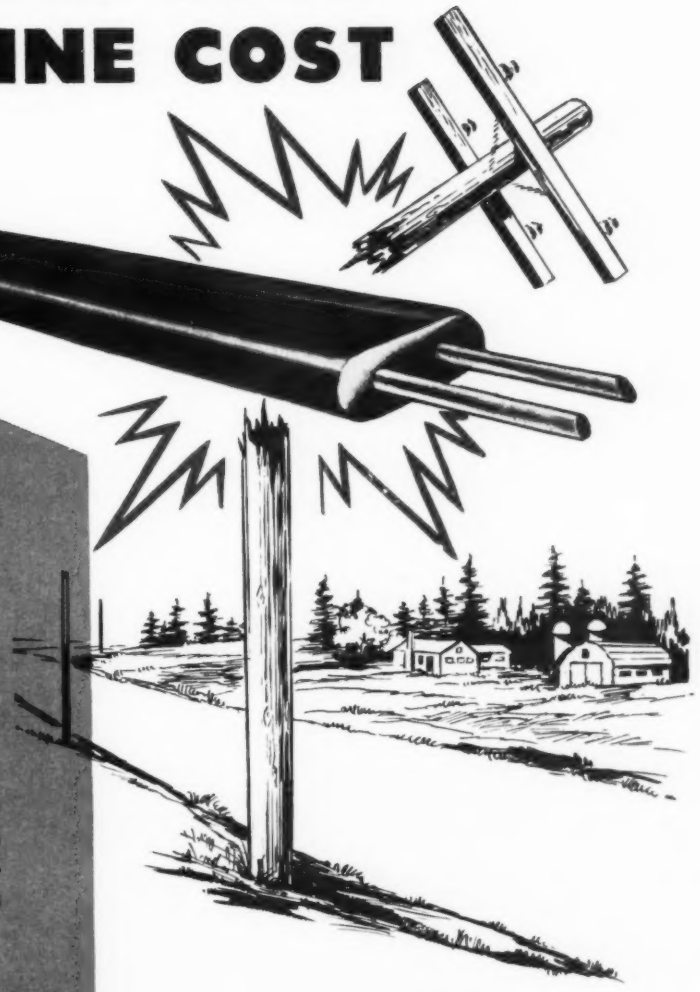

A Span lengths up to 600 feet are possible with Rex One Pair Distribution Wire. Extra service poles are eliminated on long extensions and long drop runs.

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C No tree leakage — a heavy extrusion of high molecular weight, high dielectric strength polyethylene, enclosing both conductors prevents accidental grounding and eliminates excessive right of way clearance.

D Excellent transmission characteristics — similar electrical properties to R.E.A. listed Rural Distribution Wire assure good subscriber service.

E Easily transposed — no special brackets; simply twist span at installation. Cross talk and induction noise are kept to a minimum.

F Ordering data: Two conductors #12 or #14 AWG Copperweld or .083 steel. 5,000 or 15,000 foot reels.

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support the separators and position the negative plates.

Heavy negative plates of the Exide EWA telephone battery, as assembled with the Silvium-lead-antimony positives, are designed to give balanced plate life and peak performance, the company states.

Highly resistant to chemical and electrolytic action within the cell, ribbed microporous separators and spun glass Vitrex retainers insulate the EWA battery plates.

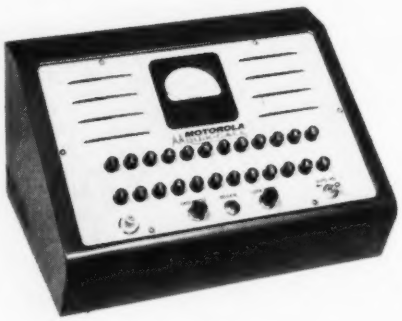
Uniform, high porosity of the separators permits free passage of electrolyte to assure delivery of high rates of current at maximum voltage. The retainers hold the active material firmly in place at the grids, assuring long, trouble-free operation, it is said.

The EWA battery cell is equipped with Exide explosion-proof gas baffle, cylinder vent and plastic vent plug. The cylinder vent will accommodate a pilot cell hydrometer. For convenience in maintenance, electrolyte level lines are marked on all four sides of the jar.

The battery is available in two or three-cell containers with 180 ampere-hour capacities and in single-cell assemblies with capacities ranging from 240 to 660 ampere-hours—all at the eight-hour discharge rate. It is supplied either filled and charged (C & W) or charged and dry (C & D). Request NP619.

•

RADIO SELECTIVE CALLING UNIT—A single-unit console providing complete selective calling facilities for land-mobile two-way radio base station installations has been announced by Motorola, Inc., Communications & Industrial Electronics Division.



Recently added to the Motorola "Quik-Call" selective signaling line, the new console combines all tone signaling elements, including tone generator, timer, power supply and code selector, in a single compact package. Greatly simplified with respect to installation, adjustment and operation, the console can be quickly and easily added to any existing two-way radio system, regardless of make or model. Over-all dimensions are approximately 13 inches x 10 inches x 7 inches, weight is 24 pounds, complete.

With the addition of selective calling facilities, a mobile receiver in a two-way radio system responds only to calls specifically directed to it, and is silenced to all other traffic on the channel. "Quik-Call" signaling can also be used to remotely operate bells, lights, sirens or other devices. Units equipped with decoder elements are individually selected by transmitting a code consisting of two dual audio tones. Simultaneous selection of several units is achieved with a single two-tone code.

An auxiliary selector box has also been added to the line which provides one-touch transmission of the four-tone code. Connected in parallel with the console, each additional selector box permits a maximum of 32 codes to be pre-selected and each transmitted with a single push-button operation. Additional selector boxes (up to 10) can provide as many as 320 pre-selected codes. Request NP620.

•

BATTERY CELL FILLER—A battery cell filler that was developed especially for railway service is now being made available to industrial battery users by Gould-National Batteries, Inc. Called the "Rite-Hite" cell filler, it controls the electrolyte level in batteries by adding water to the correct height without overflushing.

The Rite-Hite filler is made in five models—three horizontal and two vertical. The 15-inch horizontal and the 9-inch vertical fillers are best adapted to industrial-truck use.

The filler, connected to a water supply of 20 to 50-psi pressure, consists of a long tube to allow reaching across large batteries and a hydrostatic means of controlling flow. With the end of

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By simulating the design features of the spark plug and adapting the materials employed to telephone lightning arresters, Cook Electric Company engineers have created a new concept in lightning arrester design. The Mytigap lightning and surge arrester is the resultant product. This new arrester, in fact, also contains an additional advancement in the simple self-restoring feature which further reduces maintenance attention.

The new Mytigap arrester employs no carbon or organic material in its construction. Its discharge electrodes are an alloy of nickel, manganese and RU78. A similar material is used for the electrodes in automobile spark plugs and withstands the arcing and oxidation better than other known material.

For sample, literature and additional information see your distributor or telephone supply salesman.

Exploded View of Cook Mytigap Arrester.

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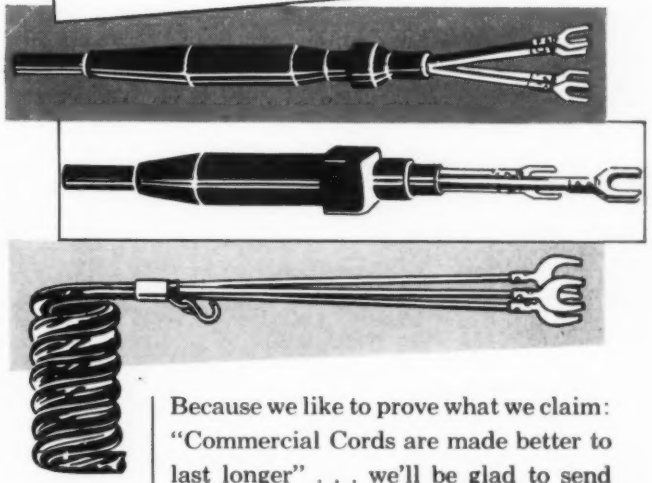

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the tube inserted in the cell opening to the proper depth as determined by a stop on the tube, water flow is turned on by a lever that operates a spring valve.

As soon as the electrolyte level covers the end of the tube, a partial vacuum within a small copper tube running inside the water tube builds up and causes a diaphragm within the housing to release the spring valve and stop the water flow.

Automatic shut-off of water eliminates the possibility of adding too much water and thus provides uniform electrolyte heights and longer battery life. The cell filler, manually operated by the lever, is also handy for washing off the top of battery cells, preferably before cells are filled and with vent plugs in place.

Maintenance of the Rite-Hite cell filler is simple as it has few moving parts. In cold areas, it should be drained of water when not in use to avoid freezing. As the nozzle on the filler is removable and threaded into a coupling on the tube, the filler can be adapted quickly to filling all types of batteries. Request NP621.

•

PORTABLE AC MILLIVOLTMETER—AC measurements to 50 microvolts are accurately made with a new, completely portable, battery operated, transistorized millivoltmeter, announced by

Fisher Research Laboratory, Inc. Its portability and complete independence from all outside power make it useful for in-the-field measurements for telephone and carrier equipment, for general laboratory use, and as a broad band amplifier. Floating voltages are easily measured. Difficulties due to line voltage fluctuations and 60 cps "beating" are completely eliminated.

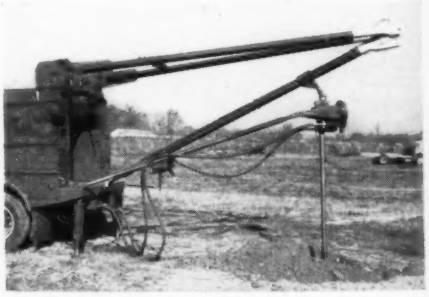
Twelve full-scale ranges between .001 and 300 volts ac are provided as well as decibal coverage between —80 and +52 dbm. Usable frequency coverage is provided between one cycle and five megacycles. Accuracy is ±3 per cent between five cycles and one megacycle. Input impedance is 22 megohms.

The use of transistors enables a substantial reduction in size from conventional units as well as eliminating stability problems due to heating and high circuit voltages. Battery power provides 400 hours of continuous operation. A leather case is provided for in-the-field use. Instrument is 5 inches x 8 inches x 4 inches. Weight complete is 5 pounds. Request NP622.

•

POWER FEED ATTACHMENTS FOR DIGGERS—Three power feed attachments for Holan diggers are now being manufactured by J. H. Holan Corp.

The new attachments use the weight and hydraulic power of the derricks to feed diggers into the ground. The downward force, created entirely by the live-boom derricks, makes it easy to



dig into hard ground and there is no need for a man to guide the diggers.

The Series 4407 Power Feed Linkage and the Series 4411 Rigid Bracket-Type Power Feed were designed for

Holan's Series 3700 Derrick, and the Series 4412 Bracket-Type Power Feed for the Holan Series 5700 Derrick. The linkage is attached to the side legs,

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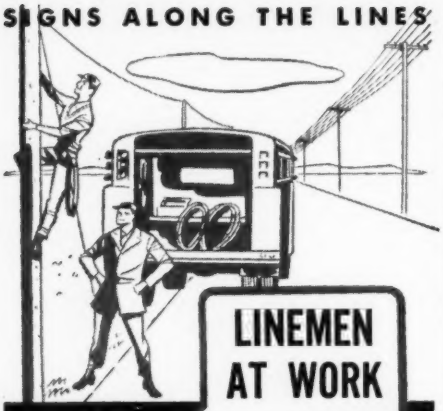

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whereas the bracket types are located on the middle leg.

Though the derrick travels in an arc, the linkage provides for a straight vertical force on the digger. The result is straight holes. The linkage is mounted off center to permit digging close to obstructions. A torque arm is provided because of the built-in swivel.

The two bracket types make it possible to get under low lines easily because the digger is closer to the derrick. The 4411 has a torque arm for the built-in swivel. An optional torque arm can be provided for applications where the digger is detached from the 4412 bracket.

All Holan derricks, diggers and power feeds stow overhead. Diggers with power feed need not be removed for pole-handling. Request NP623.

•

PORTABLE NARROW TRENCH DIGGER—A new trench digger called the Pow-R-Spade which completely eliminates the need for hand labor in digging narrow trenches for water, gas, electric, telephone and lawn sprinkling systems underground service lines has been introduced by Stampings, Inc.

The Pow-R-Spade digs a 3-inch wide trench to any depth up to 24 inches. It features specially designed removable cutting blades that are self-cleaning even in wet soil and deliver the dirt on each side of the trench without lumps or clods for easy back-fill.

Designed for complete one-man operation the trencher can be controlled, handled and transported to and from job locations by one man. According to the manufacturer, it reduces digging time by 80 per cent to 90 per cent over slow hand and spade labor. Under actual tests in Illinois bluff clay the Pow-R-Spade dug an 18-inch trench 500 feet long in only 1½ hours.

A self-contained unit, the trencher needs no other vehicle for power. It has a well-known standard four-cycle gas engine. All moving parts, with the exception of the wheels, are equipped with sealed ball bearings which never require lubrication. Wheels are equipped with zerk fittings. The entire machine is shipped completely assembled.

The Pow-R-Spade is pulled backward by the operator for easy control and requires no wind-up guide ropes or cables. It can dig right up to building foundations and make right angle bends or round corners as desired. Request NP624.

•

DIAL STICKERS FOR NUMBER CHANGES—The Topflight Corp. has developed pressure-sensitive adhesive dial stickers that are mailed to telephone subscribers whose numbers are

being changed. Instructions for removing stickers and applying to telephone sets are printed on the cards. The accompanying illustration shows (at top) two sides of a post card type Mail-O-Stix sent to one-instrument subscribers.

At the bottom of the illustration are two examples of cards mailed in envelopes to multiple set customers. These are torn from perforated sheets containing six cards for more speedy handling when numbers are stamped or typed. Request NP625.

We Cannot Escape Ourselves

"Resources of the spirit are like savings: They must be accumulated before they are needed. When they are needed, there is no substitute for them. Sooner or later, the individual faces the world alone, and that moment may overwhelm him if he has no resources within himself. Distraction helps but little and betrays us when we least expect it. We can escape our physical environment and our neighbors, but we cannot escape ourselves. Everyone with any maturity of experience and self-knowledge knows that the loneliest moments are sometimes experienced in the midst of the greatest crowds and the most elaborate entertainments."—MARTEN TEN HOOR, *"Education for Privacy."*

Howard Duhamel Joins General Telephone Labs

Howard G. Duhamel has been transferred to General Telephone Laboratories, Inc. in Chicago as senior project engineer in charge of the general circuit section. For the past seven years Mr. Duhamel was chief equipment engineer of the General Telephone Co. of Ohio.

HOWARD DUHAMEL

Prior to joining the General Telephone System, he was assistant chief engineer of the Federal Telephone & Radio Corp. at Clifton, N. J., for five years, chief circuit engineer of North Electric Co., Galion, O., for 11 years, and with the Ohio Bell Telephone Co., general traffic engineering department, for five years.

Mr. Duhamel holds an A.B. degree and an E.E. degree from Ohio State University. A registered professional engineer, he is a member of the American Institute of Electrical Engineers.

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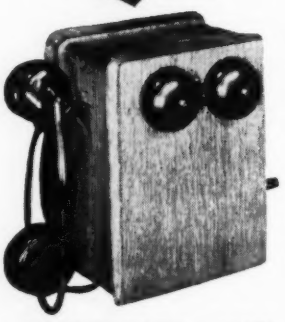

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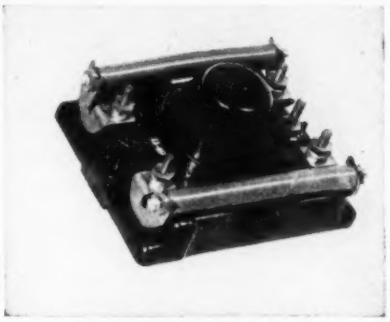

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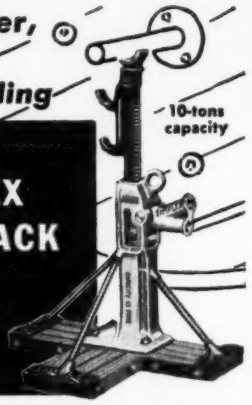

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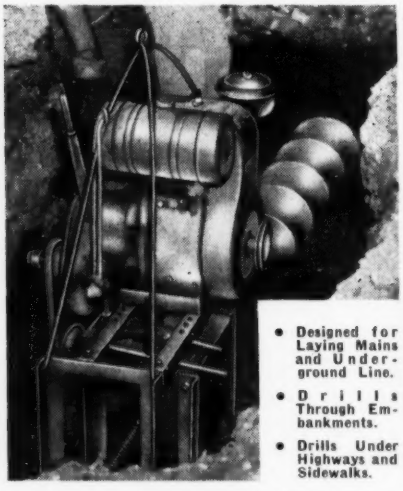

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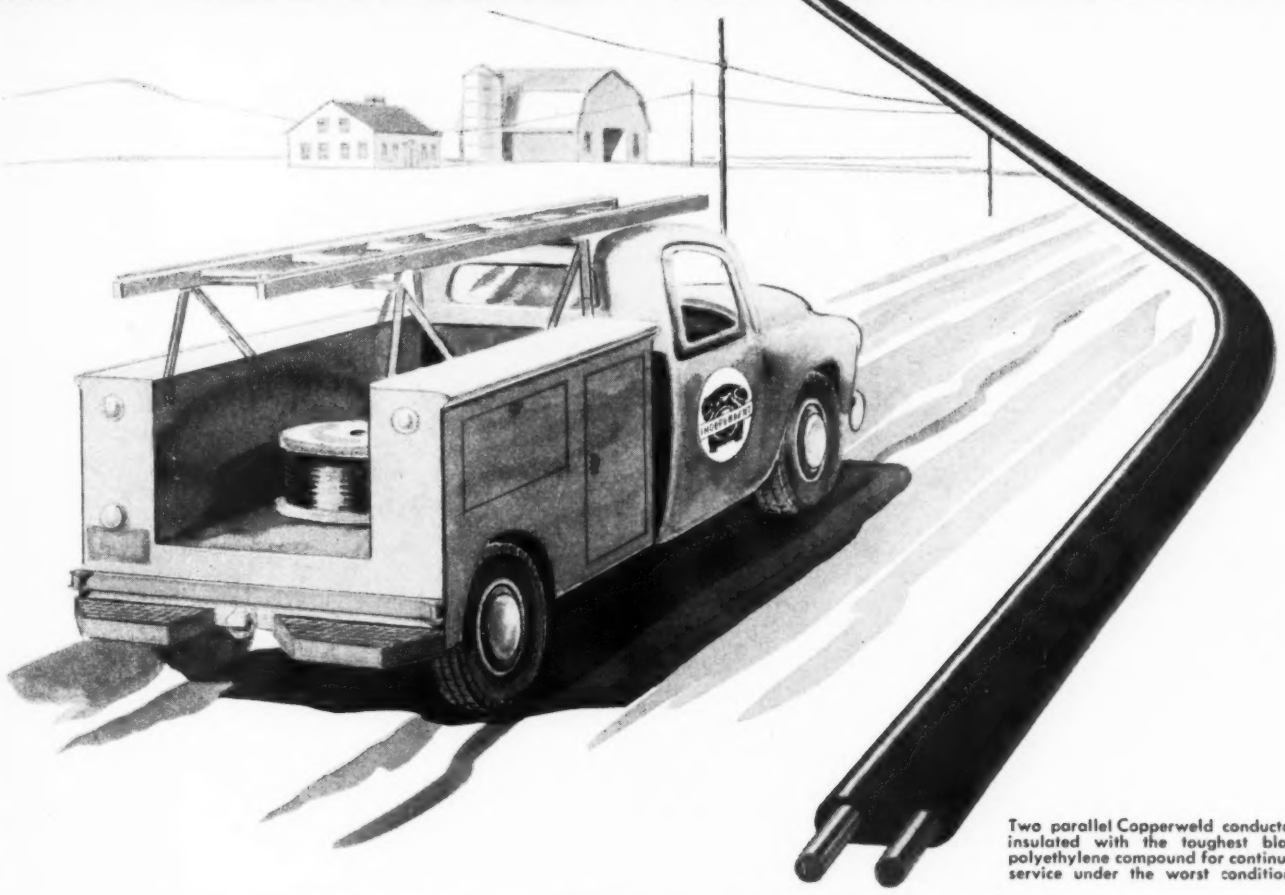

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